

TENNYSON AS A STUDENT
AND POET OF NATURE



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TORONTO

TENNYSON

As a Student and Poet of Nature

BY

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AND

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PREFACE

THIS work was originally suggested and commenced about the year 1870 by one who has since passed away.

The intention was to collect together the passages in Tennyson's Works which deal with the scientific aspects of nature. All such references have been brought together and classified, and by means of notes kindly supplied by various authorities, it has been shown how very true to fact Tennyson's descriptions are, and how keen and careful an observer he was.

Among the authorities, to whom our best thanks are due for their assistance, are the following :—

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PREFACE

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their initials.

Our thanks are also due to Lord Tennyson,
who has been kind enough to read some of the
proofs and make suggestions.

With regard to the system of reference adopted,
where only the page is mentioned the passage has
been taken from the one volume edition; where
both volume and page are given, the quotation
is from the Author's Edition, and where E.E.
precedes the number of the volume, the reference
is to the note in the Eversley Edition.

N. L.

W. L. L.

CONTENTS

SECTION	PAGE
INTRODUCTION	I
I.—COSMOGONY AND EVOLUTION	II
II.—THE EVOLUTION OF STELLAR SYSTEMS	14
III.—EVOLUTION OF THE EARTH AND MAN	18
Early Stages	18
Later Stages	22
IV.—THE STARRY HEAVENS	29
The Stars	31
The Circumpolar Stars and Bears	33
More Southerly Constellations	35
The Galaxy or Milky Way	38
Southern Stars	38
The Stars overhead Change with Latitude	39
The Stars, like our Sun, are centres of Planetary Systems	40
The Scintillation or Twinkling of the Stars	41
Interstellar Space	42
V.—SUN AND SUNLIGHT	43
The Seasons	44
The Solstices and Midnight Sun	46
Dawn and Sunrise	48
Day	49
Sunset and Twilight	53
Eclipse	55

SECTION	PAGE
VI.—SUNLIGHT COLOURS	56
The Cause of Colour	57
Colours at Dawn and Sunrise	59
Colours at Sunset	61
VII.—THE MOON AND MOONLIGHT	66
The Phases of the Moon	66
The Winter Moon	69
Lunar Halos	70
Moonrise and Set	70
Moonlight on Water	71
The Moon a dead World	71
VIII.—THE PLANETS	73
Venus as Morning Star	74
Venus as Evening Star	75
Venus seen in the Daytime	77
Mars	77
Saturn	78
Neptune	79
The Earth as a Planet	79
IX.—COMETS AND METEORS	81
Comets	81
Meteors	83
X.—THE AIR	85
Winds at Dawn	85
The various qualities of the Winds	87
Wind on Water and standing Corn	89
Wind-drifts	89
Wind-storms	90
Lightning and Thunder-storms	91
The Aurora	94
Vapour and Cloud	95
Rain	98
The Rainbow	99
Mirage	100

CONTENTS

ix

SECTION	PAGE
XI.—BIRD-LIFE AND SONG	101
Seasonal Changes	101
The Blackbird	103
Rooks	104
The Nightingale	105
The Owl	108
Habits and Haunts	109
Bird Characteristics	115
Migration of Birds	116
Songs of Birds	118
Imitation of Birds' Song	127
XII.—THE INSECT WORLD	129
Effects of Heat and Cold	129
The Metamorphoses of Insects	130
Moths	131
Bees	132
Flies	137
Dragon-flies	140
Spiders	142
Insect Noises	143
XIII.—ANIMALS AND THEIR WAYS	145
Snakes	145
Lizards	146
Dogs	148
The Horse	150
Other Animals	151
XIV.—PLANTS AND TREES	156
Seasonal Changes	157
Spring	157
Seed Time	160
The Fruit Season and Autumn	161
Winter	164
Plants :	166
Descriptions	166
Characteristics	172
Habitat	175

SECTION	PAGE
XIV. (Cont.)—Trees :	176
The Oak	176
Thorn Trees	178
Horse Chestnut	182
Ash	183
Yew	184
Elm	186
Various	187
XV.—WATER AND AQUATIC LIFE	192
Waves Breaking on Shore	192
Waves with Spray	193
Quiet Waves	194
Stormy Waves	195
Rollers	195
Tides and Currents	196
Waterfalls	198
The Sound of the Sea	199
Coast Erosion	200
Aquatic Life	200
Various References	204
XVI.—THE IMPORTANCE OF KNOWLEDGE	209
Science as a Subject of Study	209
Science in Sport	209
New Knowledge	210
Knowledge and Wisdom	211
Influence on the Future of the Race	212
XVII.—MISCELLANEOUS	214

TENNYSON AS A STUDENT
AND POET OF NATURE

TENNYSON

INTRODUCTORY

WHEN Tennyson passed from life not only did England lose one of her noblest sons, but the world a poet who, beyond all others who have ever lived, combined the gift of expression with an unceasing interest in the causes of things and in the working out of Nature's laws.

When from this point of view we compare him with his forerunners, Dante is the only one it is needful to name; but although Dante's knowledge was well abreast of his time, he lacked the fulness of Tennyson, for the reason that in his day science was restricted within narrow limits. In Dante's time, indeed—he was born some 300 years before Galileo and Tycho Brahe—science apart from cosmogony had chiefly to do with the various constellations and measurements of the passing of time and the daily and yearly motions of the sun, for the observation of which long before his

2 TENNYSON A STUDENT OF NATURE

epoch our ancient monuments were erected ; the physical and biological sciences were still unborn. Dante's great work is full of references to the science of his day ; his science and song went hand in hand as Tennyson's did in later, fuller, times. This in strong contrast with such writers as Goethe who, although both poet and student of science, rarely commingled the two strands of thought.

It is right and fitting that the highest poetry should be associated with the highest knowledge. Tennyson's great achievement has been to show us that in the study of science we have one of the bases of the fullest poetry, a poetry which appeals at the same time to the deepest emotions and the highest and broadest intellects of mankind. Tennyson, in short, has shown that science and poetry, so far from being antagonistic, must for ever advance side by side. .

So far as my memory serves me I was introduced to the late Lord Tennyson by Woolner about the year 1864. I was then living in Fairfax Road, West Hampstead, and I had erected my 6-inch Cooke Equatorial in the garden. I soon found that he was an enthusiastic astronomer and that few points in the descriptive part of the subject had escaped him. He was therefore often

in the observatory. Some of his remarks still linger fresh in my memory. One night when the moon's terminator swept across the broken ground round Tycho he said, "What a splendid Hell that would make." Again after showing him the clusters in Hercules and Perseus he remarked musingly, "I cannot think much of the county families after that." In 1866 my wife was translating Guillemin's *Le Ciel* and I was editing and considerably expanding it; he read many of the proof sheets and indeed suggested the title of the English edition, *The Heavens*.

In the seventies, less so in the eighties, he rarely came to London without discussing some points with me, and in these discussions he showed himself to be full of knowledge of the discoveries then being made.

Once I met him accidentally in Paris; he was most anxious to see Leverrier and the Observatory. Leverrier had the reputation of being *difficile*; I never found him so, but I certainly never saw him so happy as when we three were together, and he told me afterwards how delighted he had been that Tennyson should have wished to pay him a visit. I visited Tennyson at Aldworth in 1890 when he was in his 82nd year. I was then writing the "Meteoritic Hypothesis" and he had asked for

4 TENNYSON A STUDENT OF NATURE

proof sheets. When I arrived there I was touched to find that he had had them bound together for convenience in reading, and from the conversation we had I formed the impression that he had read every line. It was a subject after his own heart, as will be shown further on. One of the nights during my stay was very fine, and he said to me, "Now, Lockyer, let us look at the double stars again," and we did. There was a 2-inch telescope at Aldworth. His interest in Astronomy was persistent until his death.

The last time I met him (July, 1892), he would talk of nothing but the possible ages of the sun and earth, and was eager to know to which estimates scientific opinion was then veering.

So far I have referred, and in very condensed fashion, to Tennyson's knowledge of and interest in Astronomy as they came out in our conversations. I have done this because I was naturally most struck with it, but only a short acquaintance was necessary to show me that this interest in my own special subject was only a part of a general interest in and knowledge of scientific questions.

This was borne home to me very forcibly in about the year 1866 or 1867. The evenings of Mondays were then given up to friends who came in, *sans cérémonie*, to talk and smoke. Clays from

Broseley, including "churchwardens" and some of larger size (Frank Buckland's held an ounce of tobacco), were provided, and the confirmed smokers (Tennyson, an occasional visitor, being one of them) kept their pipes, on which the name was written, in a rack for future symposia. One night it chanced that many travellers—Bates, Baines and Winwoode Reade among them—were present, and the question of a certain kind of dust-storms came on the *tapis*. Tennyson, who had not started the subject, listened for some time and then remarked how difficult it was for a student to gain certain knowledge on such subjects, and he then astonished the company by giving the names of eight authors, four of whom had declared they had seen such dust-storms as had been described, the other four insisting that they could not be produced under any known meteorological conditions and that with the best opportunities they had never seen them.

In many of our talks I came across similar evidences of minute knowledge in various fields; nothing in the natural world was trivial to him or to be neglected. This great grasp was associated with a minute accuracy, and it was this double habit of mind which made Tennyson such a splendid observer, and *therefore* such a poet, for the whole field of nature from which to cull the most

6 TENNYSON A STUDENT OF NATURE

appropriate epithets was always present in his mind.

Hence those exquisite presentations of facts, in which true poetry differs from prose, and which in Tennyson's poetry appeal at once both to the brain and heart.

But even this is not all that must be said on this point. Much of Tennyson's finest is so fine, that it wants a knowledge on a level with his own to appreciate its truth and beauty ; many of the most exquisite and profound touches I am convinced are missed by thousands of his readers on this account. The deep thought and knowledge are very frequently condensed into a simple adjective instead of being expanded into something of a longer breath to make them apparent enough to compel admiration. This it strikes me he consistently avoided.

"All the charm of all the Muses often flowering in a lonely word."—To *Virgil*, p. 571.

Although many of the poems seem to me to be clothed with ~~images~~ to natural phenomena as with a garment, it can on the whole, I think, be gathered from them, as I gathered from our conversations, that the subject deepest in his thoughts was the origin of things in its widest sense, a

Systema Mundi, which should explain the becoming of the visible universe and *define its different parts* at different periods in its history. In this respect we have :

“ Three poets in three ages born.”

Dante, Milton and Tennyson with their minds saturated with the same theme, and I can fancy nothing in the history of human thought more interesting or encouraging than the studies of this theme as presented to us in their works published we may say, speaking very roughly, three centuries apart.

This of course is another story, but a brief reference to it is essential for my present purpose.

All the old religions of the world were based upon Astronomy, that and Medicine being the only sciences in existence. Sun, Moon and Stars were all worshipped as Gods, and thus it was that even down to Dante's time Astronomy and religion were inseparably intertwined in the prevalent Cosmogonies. The Cosmogony we find in Dante, the peg on which he hangs his *Commedia*, with the seven heavens surrounding the earth and seven hells inside it, had come down certainly from Arab and possibly prior sources ; the Empyrean, the primum Mobile, the seven Purgatories and the

8 TENNYSON A STUDENT OF NATURE

Earthly Paradise (the antipodes of Jerusalem) were later additions, the latter being added so soon as it was generally recognised that the earth was round, though the time of the navigator was not yet.

Dante constructed none of this machinery, he used it merely ; it represented the knowledge, that is the belief, of his time.

Between Dante and Milton there was a gap ; but what a gap ! It was filled by Copernicus, Tycho Brahe, Galileo, Columbus, Magellan and Vasco de Gama, to mention no more, and the astronomers and geographers between them smashed the earth-centred heavens, the interior hells and the earthly paradise into fragments.

It was while this smashing was working its way into men's minds that Milton wrote his poem, and he, like Dante, centred it on a cosmogony. Well might Huxley call it "the Miltonic Hypothesis" ! but how different from the former one, from which it was practically a retreat, carefully concealed in an important particular, but still a retreat from the old position.

Milton in his poem uses so far as heaven is concerned the cosmogony of Dante, but he carefully puts words into Raphael's mouth to indicate that after all the earth-centred scheme of the seven

heavens must give way. But the most remarkable part of "Paradise Lost" is the treatment of hell.

Milton's greatness as a poet, as a *maker*, to my mind is justly based upon the new and vast conceptions which he there gave to the world and to which the world still clings.

To provide a new hell which had been "dismissed with costs" from the earth's centre, he boldly halves heaven and creates chaos and an external hell out of the space he filches from it. "Hell-gate" is now the orifice in the primum mobile towards the empyrean.

In Tennyson we find the complete separation of Science from Dogmatic Theology, thus foreshadowed by Milton, finally achieved. In him we find, as in Dante and Milton, one fully abreast with the science and thought of the time, and after another gap, this one filled up by Newton, Kant, Herschel, Laplace and Darwin, we are brought face to face with the modern Cosmogony based upon science and Evolution. The ideas of heaven and hell in the medieval sense no longer form a necessary part of it, in Tennyson they have absolutely disappeared. In those parts of his poems in which he introduces cosmogonic ideas we have to deal with the facts presented by the heavens and the earth which can

10 TENNYSON A STUDENT OF NATURE

throw light upon the ancient history of our planet and its inhabitants.

The modern *Systema Mundi* which Tennyson dwells on over and over again is dominated by

“Astronomy and Geology, terrible Muses.”

To come back from this parenthesis I must finally point out that although some of the most pregnant and beautiful passages in Tennyson's poems have reference to the modern views of the origin of things, almost all natural phenomena are referred to in one place or another in language in which both the truest poetry and most accurate science are blended.

The breadth of the outlook upon Nature shewn by the references in the Poet's works is only equalled by the minute accuracy of observation displayed. Astronomy, geology, meteorology, biology, and, indeed, all branches of science except chemistry, are thus made to bring their tribute, so that finally we have a perfect poetic garland which displays for us the truths of Nature and Human Nature intertwined.

N. L.

SECTION I

COSMOGONY AND EVOLUTION.

LIVING at a time when such strides were being made in Physical Astronomy, when so much was being discovered and the problems of evolution in all its branches were being worked out, it is not surprising that Tennyson, with his keen interest in all things around him, made a close study of these matters and that they largely influenced his thoughts.

It is truly remarkable how clearly he traced and grasped many of the sequences in the development of our sidereal system and the gradual cooling of the earth, and still more perhaps with what power he portrayed the various new fields of thought opened up to mankind ; concise statement being ever blended with most exquisite poetic imagery. The "blind beginnings," as Tennyson calls the early stages of the development of our universe, evidently occupied a large portion of his

12 COSMOGONY AND EVOLUTION

thoughts, and the broad way in which he considered the questions raised is shown no less by the close connection he insists upon between Astronomy and Geology, than by the manner in which the evolutionary processes are followed, not only among the planetary and stellar worlds but in the stages of development of the earth and man.

I

What be those crown'd forms high over the sacred fountain?
Bards, that the mighty Muses have raised to the heights of
the mountain,
And over the flight of the Ages! O Goddesses, help me
up thither!
Lightning may shrivel the laurel of Cæsar, but mine would
not wither.
Steep is the mountain, but you, you will help me to over-
come it,
And stand with my head in the zenith, and roll my voice
from the summit,
Sounding for ever and ever thro' Earth and her listening
nations,
And mixt with the great Sphere-music of stars and of
constellations.

II

What be those two shapes high over the sacred fountain,
Taller than all the Muses, and huger than all the mountain?
On those two known peaks they stand ever spreading and
heightening.
Poet, that evergreen laurel is blasted by more than
lightning!

Look, in their deep double shadow the crown'd ones all
disappearing!

Sing like a bird and be happy, nor hope for a deathless
hearing!

'Sounding for ever and ever?' pass on! the sight
confuses—

These are Astronomy and Geology, terrible Muses!¹

Parnassus, p. 872.

¹ Such was Geology, in alliance with Astronomy, to Tennyson; what it was to Wordsworth can be gathered from the following quotation:

"Nor is that Fellow wanderer, so deem I,
Less to be envied, (you may trace him oft
By scars which his activity has left
Beside our roads and pathways, though, thank Heaven!
This covert nook reports not of his hand)
He who with pocket-hammer smites the edge
Of luckless rock or prominent stone, disguised
In weather-stains or crusted o'er by Nature
With her first growths, detaching by the stroke
A chip or splinter—to resolve his doubts;
And with that ready answer satisfied,
The substance classes by some barbarous name,
And hurries on; or from the fragment picks
His specimen, if but haply interveined
With sparkling mineral, or should crystal cube
Lurk in its cells—and thinks himself enriched,
Wealthier, and doubtless wiser, than before!"

—*Excursion*, Book III.

SECTION II

THE EVOLUTION OF STELLAR SYSTEMS.

It is clear from the poems that both Laplace's and the meteoritic hypotheses of system formation had been carefully studied. The clashing together of meteor swarms, the consequent production of eddies, nebulous first and stellar afterwards, and the collision between formed, that is condensed, bodies to recommence the cycle are all alluded to :

I saw the flaring atom-streams
And torrents of her myriad universe,
Ruining along the illimitable inane,
Fly on to clash together again, and make
Another and another frame of things
For ever :

Lucretius, p. 161.
Vol. II., p. 223.

Hither, when all the deep unsounded skies
Shudder'd with silent stars, she clomb,
And as with optic glasses her keen eyes
Pierced thro' the mystic dome,

EVOLUTION OF STELLAR SYSTEMS 15

Regions of lucid matter taking forms,
Brushes of fire, hazy gleams,
Clusters and beds of worlds, and bee-like swarms
Of suns, and starry streams.

E. E. Vol. I., pp. 368-369.

Must my day be dark by reason, O ye Heavens, of your
boundless nights,
Rush of Suns, and roll of systems, and your fiery clash of
meteorites ?

God and the Universe, p. 894.

Our little systems have their day ;
They have their day and cease to be :

In Memoriam, p. 247,
Vol. V., p. 43.

“ The wanderings
Of this most intricate Universe
Teach me the nothingness of things.”

A Character, p. 13.
Vol. I., p. 58.

Here is the story of our world or universe from
nebula to man :—

This world was once a fluid haze of light,
Till toward the centre set the starry tides,
And eddied into suns, that wheeling cast
The planets : then the monster, then the man ;

16 EVOLUTION OF STELLAR SYSTEMS

Tattoo'd or woaded, winter-clad in skins,
Raw from the prime, and crushing down his mate ;
As yet we find in barbarous isles, and here
Among the lowest.

The Princess ; A Medley, pp. 174-175.
Vol. IV., p. 35.

Our sun is a remnant, has been " shaped " out of
a nebula :

There sinks the nebulous star we call the Sun,
If that hypothesis of theirs be sound.

The Princess ; A Medley, p. 186.
Vol. IV., p. 67.

As one would sing the death of war,
And one would chant the history
Of that great race which is to be,
And one the shaping of a star !

In Memoriam, p. 277.
Vol. V., p. 161.

Even a problem which has recently been worked
out by Sir George Darwin for the case of the moon
being detached from the earth in the early stages,
has not escaped him :

A planet equal to the Sun
Which cast it.

To E. Fitzgerald, p. 538.

EVOLUTION OF STELLAR SYSTEMS 17

Possible collisions between "shaped" bodies, as contrasted with swarms of meteorites, and their result, are thus referred to :

And therefore now
Let her, that is the womb and tomb of all,
Great Nature, take, and forcing far apart
Those blind beginnings that have made me man,
Dash them anew together at her will
Thro' all her cycles—

Lucretius, p. 164.
Vol. II., p. 231.

All the above phenomena are but representative stages in the evolution processes :

Æonian Evolution, swift or slow,
Thro' all the Spheres

The Ring, p. 852.

SECTION III

EVOLUTION OF THE EARTH AND MAN

Early Stages—Later Stages.

IT is clear that Tennyson saw the complete continuity of the processes of evolution which have gone on and are still going on, both in the formation and development of the planet and of man. The moulding of the planet and of man was to him an unbroken record. Hence we generally find earth and man closely connected in the passages which deal with evolution.

It is convenient to separate the references to the earlier and the later stages.

EARLY STAGES

We have first a molten crust :

They say,
The solid earth whereon we tread

In tracts of fluent heat began,
And grew to seeming-random forms,
The seeming prey of cyclic storms,
Till at the last arose the man ;
Who throve and branch'd from clime to clime
The herald of a higher race.

In Memoriam, p. 281.

Vol. V., p. 178.

A land of old upheaven from the abyss
By fire, to sink into the abyss again ;

The Passing of Arthur, p. 468.

Vol. III., p. 382.

After the time of coming of land and water,
these have often changed places by the rising and
falling of the land—gigantic see-saws :

There rolls the deep where grew the tree.

Oh earth, what changes hast thou seen !

There where the long street roars, hath been
The stillness of the central sea.

In Memoriam, p. 282.

Or the land has been worn away by the action of
the water, or its surface has been changed by
earthquakes :

The moanings of the homeless sea,

The sound of streams that swift or slow

Draw down Æonian hills, and sow

The dust of continents to be ;

In Memoriam, p. 256.

Vol. V., p. 85.

20 EVOLUTION OF THE EARTH

Gone the fires of youth, the follies, furies, curses, passionate
tears,

*Gone like fires and floods and earthquakes of the planets'
dawning years.*

Fires that shook me once, but now to silent ashes fallen
away.

Cold upon the dead volcano sleeps the gleam of dying day.

Locksley Hall: Sixty Years After, p. 561.

. . . the Giant Ages heave the hill

And break the shore, and evermore

Make and break, and work their will ;

. . . world on world in myriad myriads roll

Round us, each with different powers,

And other forms of life than ours,

The Duke of Wellington, p. 221.

Vol. II., p. 243.

In dealing with evolution we may regard time
as limitless :

Æonian music measuring out

The steps of Time—

In Memoriam, p. 273.

Vol. V., p. 150.

Man as yet is being made, and ere the crowning Age of
ages,

Shall not æon after æon pass and touch him into shape?

The Making of Man, p. 891.

Who knows? or whether this earth-narrow life

Be yet but yolk, and forming in the shell.

The Ancient Sage, p. 549.

But if twenty million of summers are stored in the sunlight
still,
We are far from the noon of man, there is time for the race
to grow.

Red of the Dawn!

Is it turning a fainter red? So be it, but when shall we lay
The Ghost of the Brute that is walking and haunting us yet,
and be free?
In a hundred, a thousand, winters? Ah, what will *our*
children be,
The men of a hundred thousand, a million summers away?

The Dawn, p. 890.

And he felt himself in his force to be Nature's crowning
race.
As nine months go to the shaping an infant ripe for his
birth,
So many a million of ages have gone to the making of
man :
He now is first, but is he the last? is he not too base?

Maud, p. 290.

Vol. IV., p. 170.

Where all that was to be, in all that was,
Whirl'd for a million æons thro' the vast
Waste dawn of multitudinous eddying light—

De Profundis, p. 532.

Many an Aeon moulded earth before her highest, man, was
born,
Many an Aeon too may pass when earth is manless and
forlorn.

22 EVOLUTION OF THE EARTH

Earth so huge and yet so bounded—pools of salt and plots
of land—

Shallow skin of green and azure—chains of mountain,
grains of sand !

Locksley Hall. Sixty Years After, p. 566.

LATER STAGES.

The references to these enter more fully into questions connected with evolution. The struggle for existence and the survival of the fittest are brought upon the scene. Although Nature appears cruel in her methods, all changes lead to ultimate good.

Is there evil but on earth? or pain in every peopled sphere?
Well be grateful for the sounding watchword, 'Evolution'
here.

Evolution ever climbing after some ideal good,
And Reversion ever dragging Evolution in the mud.

Locksley Hall. Sixty Years After, p. 565.

For Nature is one with rapine, a harm no preacher can
heal,

The May-fly is torn by the swallow, the swallow spear'd by
the shrike,

And the whole little wood where I sit is a world of plunder
and prey.

Maud, p. 290.
Vol. IV., p. 170.

Nature, red in tooth and claw
 With *rapine*, shriek'd against his creed—

In Memoriam, p. 261.

Vol. V., p. 104.

So careful of the type she seems,
 So careless of the single life ;

.

'So careful of the type?' but no
 From scarped cliff and quarried stone
 She cries, 'A thousand types are gone :
 I care for nothing, all shall go.'

In Memoriam, p. 261.

Earthquakes are referred to as part of the
 mechanism of these changes.

. . . great goddess . . .

Who causest the safe earth to shudder and gape,
 And gulf and flatten in her closing chasm
 Doomed cities, hear.
 Whose lava-torrents blast and blacken a province
 To a cinder, hear.

The Cup, p. 763.

And all the fragments of the living rock
 (Huge blocks, which some old trembling of the world
 Had loosen'd from the mountain, till they fell
 Half-digging their own graves).

The Lover's Tale, p. 489.

24 EVOLUTION OF THE EARTH

The "testimony of the rocks" regarding these changes both as regards former types of living things and changes of level is indicated :

Huge Ammonites, and the first bones of Time ;

Prologue. The Princess ; A Medley, p. 165.
Vol. IV., p. 10.

And, below, stuck out
The bones of some vast bulk that lived and roared
Before man was.

The Princess, p. 185.

A discord. Dragons of the prime,
That tear each other in their slime,
Were mellow music match'd with him.

In Memoriam, p. 262.
Vol. V., p. 105.

A pasty costly-made,
Where quail and pigeon, lark and leveret lay
Like fossils of the rock, with golden yolks
Imbedded and injellied ;

Audley Court, p. 80.

Or like an old-world mammoth bulk'd in ice,

The Princess, p. 197.

That afternoon the Princess rode to take
The dip of certain strata to the North.

The Princess ; A Medley, p. 183.
Vol. IV., p. 57.

We find mention of some of the rock masses produced as a result of the evolutionary changes brought about by fire or water :

Hammering and clinking, chattering stony names
Of shale and hornblende, rag and trap and tuff,
Amygdaloid and trachyte,

The Princess; A Medley, p. 186.
Vol. IV., p. 64.

Evolution spells change, but the change is always for the better. Man's development, even his intellectual development, and the various advances which it brings, are all part and parcel of the evolutionary process.

I that rather held it better men should perish one by one,
Than that earth should stand at gaze like Joshua's moon in
Ajalon !

Not in vain the distance beacons. Forward, forward let us
range,
Let the great world spin for ever down the ringing grooves
of change.

Thro' the shadow of the globe we sweep into the younger
day :

Better fifty years of Europe than a cycle of Cathay.

Mother-Age (for mine I knew not) help me as when life
begun :

Rift the hills, and roll the waters, flash the lightnings, weigh
the Sun.

Locksley Hall, p. 103.

26 EVOLUTION OF THE EARTH

Among the great advances due to science the future conquest of the air is referred to :

Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight, dropping down with costly
bales ;

Heard the heavens fill with shouting, and there rain'd a
ghastly dew

From the nations' airy navies grappling in the central blue ;

Locksley Hall, p. 101.

We must be full of hope and patience :

'ourselves are full

Of social wrong ; and maybe wildest dreams
Are but the needful preludes of the truth :
For me, the genial day, the happy crowd,
The sport half-science, fill me with a faith,
This fine old world of ours is but a child
Yet in the go-cart. Patience ! Give it time
To learn its limbs : there is a hand that guides.'

The Princess ; A Medley, p. 217.

Penultimate and ultimate stages are thus
glanced at:

Far away beyond her myriad coming changes earth will be
Something other than the wildest modern guess of you and
me.

Locksley Hall, Sixty Years After, p. 566.

Earth at last a warless world, a single race, a single tongue,
I have seen her far away—for is not Earth as yet so
young?—

Locksley Hall. Sixty Years After, p. 565.

Slav, Teuton, Kelt, I count them all,
My friends and brother souls,
With all the peoples, great and small,
That wheel between the poles.

Epilogue, p. 570.

Here is the poet's view as to what "the hand
that guides" intends by all this evolution of man.

The crowning race
Of those that, eye to eye, shall look
On knowledge ; under whose command
Is Earth and Earth's, and in their hand
Is Nature like an open book ;

In Memoriam, p. 286.

Would, indeed, we had been,
In lieu of many mortal flies, a race
Of giants living, each, a thousand years,
That we might see our own work out,
and watch
The sandy footprint harden into stone.

The Princess, p. 184.

The end of evolution, on this planet at all events, is thus pictured ; a volume in four lines !

And the homeless planet at length will be wheeled thro
the silence of Space,
Motherless evermore of an ever-vanishing race,
When the worm shall have writhed its last and its last
brother-worm will have fled
From the dead fossil skull that is left in the rocks of an
earth that is dead.

Despair, p. 547.

SECTION IV

THE STARRY HEAVENS

The Stars. The Circumpolar Stars and Bears. More southerly Constellations. The Galaxy or Milky Way. Southern Stars. The Stars overhead Change with Latitude. The Stars, like our Sun, are centres of Planetary Systems. The Scintillation or Twinkling of Stars. Interstellar Space.

IN the general contemplation of the heavens, the stars and moon at night and the sun by day take the first place; planets are not so obvious, comets are rare.

The sun, the moon, the stars, the seas, the hills and the plains—

Are not these, O Soul, the Vision of Him who reigns?

The Higher Pantheism, p. 239.

Vol. II., p. 304.

The heavens between their fairy fleeces pale
Sow'd all their mystic gulfs with fleeting stars.

The Gardener's Daughter, p. 76.

Vol. I., p. 283.

And over thee the suns arise and set,
And the lark sings, the sweet stars come and go.

Harold, p. 666.
Vol. VI., p. 261.

"O Sun, that wakenest all to bliss or pain,
O moon, that layest all to sleep again,
Shine sweetly :"

Gareth and Lynette, p. 334.
Vol. III., p. 78.

—great deeds cannot die ;
They with the sun and moon renew their light
For ever, blessing those that look on them.

The Princess, p. 184.

Fearing not to plunge
Thy torch of life in darkness, rather—thou
Rejoicing that the sun, the moon, the stars
Send no such light upon the ways of men
As one great deed.

Tiresias, p. 540.

It will be convenient to classify the references
to the heavenly bodies.

We begin with the stars.

THE STARS.

Tennyson, although he was very shortsighted and wore spectacles,¹ was never tired of observing and talking about the stars; the double, or married, stars, as the Poet once described them, had a special attraction for him.

In a previous section we have given references to star structure and formation, so that only two related points need be dealt with here. It is not a little curious that Tennyson has referred so sparingly to the colour and the variability of stars. Regarding colour, or rather its absence, two passages have been noted.

We saw the large white stars rise one by one.

Dream of Fair Women, p. 60.
Vol. I., p. 226.

White-breasted like a star
Fronting the dawn he moved;

Ænone, p. 40.

The old theory of variability, namely that the variation in the light is caused by the star being a

¹ He told me that without spectacles the two stars of the Great Bear forming the pointers appeared to him as two intersecting circular discs.—N. L.

flattened disc, or having one side more luminous than the other, appears to be referred to here :

As tho' a star, in inmost heaven set,
Ev'n while we gaze on it,
Should slowly round his orb, and slowly grow
To a full face, there like a sun remain
Fix'd—then as slowly fade again,
And draw itself to what it was before ;

Eleànore, p. 23.

Vol. I., p. 96.

A well established cause of variability is the eclipse of a bright star by a dark companion coming between it and the earth. Algol is one of the chief representatives of this class and is thus referred to :

Edith, whose pensive beauty, perfect else,
But subject to the season or the mood,
Shone like a mystic star between the less
And greater glory varying to and fro,
We know not wherefore ;

Aylmer's Field, p. 143.

Passages relating to particular stars are numerous. In one place or another many of the brightest stars in the heavens are referred to, including Canopus, the brightest in the southern heavens, but we have strangely enough noted no reference to Vega (α Lyrae).

As Britain lies in a northern latitude the northern stars are chiefly indicated. It would appear that his travels had never taken him south enough to see the Southern Cross, which unlike the Northern Pole star, is so far from the South Celestial Pole that it can be seen in about 25° N. lat.¹

The celestial movement of the stars visible in Britain around the N. Pole in ever increasing circles, and therefore with greater apparent velocities, as their distance from the Pole increases, was so present in the poet's mind that he tells the whole story in one adjective.

Now poring on the glowworm, now the star,
I paced the terrace, till the Bear had wheel'd
Thro' a great arc his seven *slow* suns.

The Princess ; A Medley, p. 189.

Vol. IV., p. 75.

The Great and Little Bear constellations are not far from the Pole, the movements of the contained stars are therefore slow.

THE CIRCUMPOLAR STARS AND BEARS.

There are so many references to the Bears that it is well to group them together ; in our latitude they are representatives of the stars which in their

¹ I have seen it when travelling on the Nile near Thebes.—N.L.

daily journey round the Pole not only move slowly but always appear above the horizon and therefore never rise or set ; they represent the circum-polar stars :

In utter darkness closed the day, my son—
But earth's dark forehead flings athwart the heavens
Her shadow crown'd with stars—and yonder—out
To northward—some that never set, but pass
From sight and night to lose themselves in day.

The Ancient Sage, p. 550.

The seven clear stars of Arthur's Table Round—
For, brother, so one night, because they roll
Thro' such a round in heaven, we named the stars,

The Holy Grail, p. 429.

The brook shall babble down the plain,
At noon or when the lesser wain
Is twisting round the polar star ;

In Memoriam, p. 276.

Vol. V., p. 158.

The lesser Wain refers to the Little Bear.

And we danced about the may-pole and in the hazel copse,
Till Charles's Wain came out above the tall white chimney-tops.

New Year's Eve, p. 51.

Vol. I., p. 199.

Charles's Wain and the Dipper are other names for the Great Bear. The stars "came out," they did not rise.

The following references are to the pole-star itself, otherwise called *polaris* ; it is situated in the

tail of the Little Bear and very near now to the celestial pole :

One statue in the mould
Of Arthur, made by Merlin, with a crown,
And peak'd wings pointed to the Northern Star.
The Holy Grail, p. 422.
Vol. III., p. 266.

A prince I was, blue-eyed, and fair in face,
Of temper amorous, as the first of May,
With lengths of yellow ringlet, like a girl,
For on my cradle shone the Northern Star.
The Princess, p. 169.

Blue eyes and yellow hair indicate an origin in Scandinavia, a country in a higher northern latitude and therefore more under the northern stars than Britain.

MORE SOUTHERLY CONSTELLATIONS

Among these Orion takes the first place.

What the Great Bear is to the northern constellations, Orion is to the Equatorial ones ; this constellation is also well seen in Britain.

Many a night from yonder ivied casement, ere I went to rest,
Did I look on great Orion sloping slowly to the West.
Many a night I saw the Pleiads, rising thro' the mellow shade,
Glitter like a swarm of fire-flies tangled in a silver braid.

Locksley Hall, p. 98.
Vol. II., p. 42.

The figure which marks the constellation appears upright when it is seen in the south ; it is inclined, therefore—it “slopes,”—when seen near the East or West. It appears quite recumbent when in the West or East,

and found
The shining daffodil dead, and Orion low in his grave.

Maud, p. 289.
Vol. IV., p. 167.

This is repeated :

it fell at a time of year,
When the face of night is fair on the dewy downs,
And the shining daffodil dies, and the Charioteer
And starry Gemini hang like glorious crowns
Over Orion's grave low down in the west,
That like a silent lightning under the stars
She seem'd to divide in a dream from a band of the blest.

Maud, p. 306.

In the centre of the constellation there are three equally spaced stars located on the sword belt :

Like those three stars of the airy Giant's zone,
That glitter burnish'd by the frosty dark ;

The Princess, p. 199.

In the sword itself is the wonderful Nebula which as seen in a large telescope or long exposed

photograph is one of the most majestic sights in the heavens :

a single misty star,
Which is the second in a line of stars
That seem a sword beneath a belt of three,
I never gazed upon it but I dreamt
Of some vast charm concluded in that star
To make fame nothing.

Merlin and Vivien, p. 388.
Vol. III., p. 183.

After the Bears and Orion references to other constellations and stars visible in Britain are sparse :

Because I would have reach'd you, had you been
Sphered up with Cassiopëia, or the enthroned
Persephone in Hades,

The Princess; A Medley, p. 192.
Vol. IV., p. 83.

If they dared
To harm you, I would blow this Philip and all
Your trouble to the dogstar and the devil.

Elisabeth. To the Pleiads, uncle ; they have lost a
sister.

Queen Mary, p. 587.
Vol. VI., p. 25.

On shore, and when
Thro' scudding drifts the rainy Hyades
Vext the dim sea :

Ulysses, p. 95.
Vol. II., p. 33.

THE GALAXY OR MILKY WAY

Parts of this, as it completely circles the earth,
are seen in both hemispheres :

The fires that arch this dusty dot—
Yon myriad-worlded way—
The vast sun-clusters' gather'd blaze,
World-isles in lonely skies,
Whole heavens within themselves, amaze
Our brief humanities.

Epilogue, p. 570.

The gemmy bridle glitter'd free,
Like to some branch of stars we see
Hung in the golden Galaxy.

The Lady of Shalott, p. 29.

This probably refers to the stars in Auriga,
Perseus and Cassiopeia.

SOUTHERN STARS

When we pass or travel from northern latitudes
to southern ones, the southern stars gradually rise
into visibility above the southern horizon ; when

they are all revealed the sight is more majestic than when only the northern stars are viewed.

New stars all night above the brim
Of waters lighten'd into view ;
They climb'd as quickly, for the rim
Changed every moment as we flew.
Far ran the naked moon across
The houseless ocean's heaving field,
Or flying shone, the silver boss
Of her own halo's dusky shield ;

The Voyage, p. 117.

Vol. II., p. 119.

Larger constellations burning, mellow moons and happy
skies,

Locksley Hall, p. 102.

Vol. II., p. 57.

' We drank the Libyan Sun to sleep, and lit
Lamps which out-burn'd Canopus.'

A Dream of Fair Women, p. 59.

Vol. I., p. 223.

Canopus is one of the brightest of the southern stars.

THE STARS OVERHEAD CHANGE WITH LATITUDE

As the Earth is surrounded on all sides by stars, every place has some star or another which passes overhead.

Sunny tokens of the Line,
 Polar marvels, and a feast
 Of wonder, out of West and East,
 And shapes and hues of Art divine !
 All of beauty, all of use,
That one fair planet can produce
Brought from under every star,
Ode Sung at the
Opening of the International Exh., p. 223.

O wheresoever those may be,
 Betwixt the slumber of the poles,
 To-day they count as kindred souls ;
 They know me not, but mourn with me.
In Memoriam, p. 275.

Katie walks
 By the long wash of Australasian seas
 Far off, and holds her head to other stars,
 And breathes in April-autumns.¹
The Brook, p. 142.
Vol. II., p. 158.

THE STARS, LIKE OUR SUN, ARE CENTRES OF PLANETARY SYSTEMS.

The stars, which are but suns far removed, have planets revolving round them as in our own system.

¹ "April-autumns" in the later editions replaces "Converse seasons" in the first.

THE TWINKLING OF STARS 41

And the suns of the limitless Universe sparkled and shone
in the sky,

.
The dark little worlds running round them were worlds of
woe like our own.

Despair, p. 545.

While the silent heavens roll and Suns along their fiery
way,
All their planets whirling round them, flash a million miles
a day.

Locksley Hall. Sixty Years After, p. 566.

Many a hearth upon our dark globe sighs after many a
vanish'd face,
Many a planet by many a sun may roll with the dust of a
vanish'd race.

Raving politics, never at rest— as this poor earth's pale
history runs,—
What is it all but a trouble of ants in the gleam of a million
million of suns?

Demeter and other Poems. Vastness, p. 850.

THE SCINTILLATION OR TWINKLING OF THE STARS

*And as the fiery Sirius alters hue,
And bickers into red and emerald,*

The Princess, p. 199.

THE STARRY HEAVENS

Her heart is like a throbbing star.

Kate, p. 24.

and from them rose
A cry that shiver'd to the tingling stars,

The Passing of Arthur, p. 472.

Vol. III., pp. 393-394.

Morte d'Arthur, p. 71.

Vol. I., p. 268.

INTERSTELLAR SPACE

The Gods, who haunt
The lucid interspace of world and world,
Where never creeps a cloud, or moves a wind,
Nor ever falls the least white star of snow,
Nor ever lowest roll of thunder moans,
Nor sound of human sorrow mounts to mar
Their sacred everlasting calm !

Lucretius, p. 162.

Star to star vibrates light : may soul to soul
Strike thro' a finer element of her own ?

Aylmer's Field, p. 151.

Vol. II., p. 182.

SECTION V

SUN AND SUNLIGHT

The Seasons.—The Solstices and Midnight Sun.—Dawn and Sunrise.—Day.—Noon.—Sunset and Twilight.—Eclipse.

WE have noted few passages relating to the Sun's physical constitution beyond those already referred to in the Section dealing with the evolution of stellar systems. There is no evidence in the poems that the poet followed the discoveries which had been made since 1868 by means of the spectroscope. That instrument enables us to study the Sun's exterior envelopes which without its aid or an eclipse of the Sun by the Moon remain invisible in consequence of the glare of reflected sunlight. The lines

*When Science reaches forth her arms
To feel from world to world,*

quoted on page 78, which might seem to refer to this really apply to the discovery of Neptune.

The following refers to Sun-spots :

The very source and fount of Day
Is dash'd with wandering isles of night.

In Memoriam, p. 254.

The fact that the sun, like the other stars, has a movement in space is thus noticed.

' We sleep and wake and sleep, but all things move ;
The Sun flies forward to his brother Sun ;
The dark Earth follows wheel'd in her ellipse ; . . . '

The Golden Year, p. 94.
Vol. II., p. 30.

The Sun will run his orbit, and the Moon
Her circle.

Love and Duty, p. 93.

THE SEASONS

We now come to the Sun as a light giver and founder of the day and the year.

The daily course of the Sun is the subject of a large number of references, as was to be expected. The yearly course is also dealt with. The following deal with the course of the year from spring onwards.

Come, Spring ! She comes, and Earth is glad
To roll her North below thy deepening dome,
But ere thy maiden birch be wholly clad,
And these low bushes dip their twigs in foam,
Make all true hearths thy home.

The Progress of Spring, p. 866.

And even into my inmost ring
A pleasure I discern'd,
Like those blind motions of the Spring,
That show the year is turn'd.

The Talking Oak, p. 91.
Vol. II., p. 18.

Now fades the last long streak of snow,
Now burgeons every maze of quick
About the flowering squares, and thick
By ashen roots the violets blow.

In Memoriam, p. 280.
Vol. V., p. 175.

Blow, for our Sun is mighty in his May
Blow, for our Sun is mightier day by day !

The Coming of Arthur, p. 317.

The varying year with blade and sheaf
Clothes and reclothes the happy plains ;

The Day-Dream, p. 104.
Vol. II., p. 66.

SUN AND SUNLIGHT

Reels, as the golden Autumn woodland reels
 Athwart the smoke of burning weeds.

The Princess, p. 215.

Vol. IV., p. 148.

But Summer on the steaming floods,
 And Spring that swells the narrow brooks,
 And Autumn, with a noise of rooks,
 That gather in the waning woods,

In Memoriam, p. 269.

Vol. V. p. 135.

While the earth is thus traversing its four seasons, the sun is pursuing its annual apparent path along the signs of the Zodiac, the signs having been named after the constellations through which the ecliptic—the sun's path—passes.

'Till the sun drop, dead, from the signs.'

The Princess, p. 214.

Vol. IV., p. 144.

THE SOLSTICES AND MIDNIGHT SUN

At the beginning of spring at the North Pole the sun begins to rise after a six months' night, and, as shown in a diagram of the seasons,¹ the northern regions by the earth's "rolling" movement are brought out of the shadow into the sunlight, the

¹ See Fig. 15 Lockyer's *Elementary Lessons in Astronomy*.

THE SOLSTICES AND MIDNIGHT SUN 47

dome of which deepens till midsummer is reached.

At the Summer Solstice for a reason which is easily grasped by looking at the diagram of the seasons, in consequence of the inclination of the earth's axis, and the consequent presentation of the northern regions towards the sun, even at midnight the sun remains above the horizon.

I was one
To whom the touch of all mischance but came
As night to him that sitting on a hill
Sees the midsummer, midnight, Norway sun
Set into sunrise ; then we moved away.

The Princess ; A Medley, p. 195.
Vol. IV., p. 89.

At the Summer Solstice the nights are short.

Till now the dark was worn, and overhead
The lights of sunset and of sunrise mix'd
In that brief night ; the summer night, that paused
Among her stars to hear us ; stars that hung
Love-charm'd to listen : all the wheels of Time
Spun round in station, but the end had come.

Love and Duty, p. 93.
Vol. II., p. 27.

Here is a reference to the Winter Solstice.

And there, that day when the great light of heaven,
Burn'd at his lowest in the rolling year,

The Passing of Arthur, p. 468.

DAWN AND SUNRISE

The following extracts will show how closely these were watched. The colouring is dealt with in the next section.

The twilight of the coming day,
Already glimmers in the east.

The Foresters, p. 810.

Hope was ever on her mountain, watching till the day
begun,
Crown'd with sunlight—over darkness—from the still unrisen
sun.

Locksley Hall. Sixty Years After, p. 562.

I.

Once again thou flamest heavenward, once again we see
thee rise.
Every morning is thy birthday gladdening human hearts
and eyes.
Every morning here we greet it, bowing lowly down before
thee,
Thee the Godlike, thee the changeless, in thine ever-
changing skies.

II.

Shadow-maker, shadow-slayer, arrowing light from clime to
clime,
Hear thy myriad laureates hail thee monarch in their wood-
land rhyme.
Warble bird, and open flower, and, men, below the dome of
azure
Kneel adoring Him the Timeless in the flame that measures
Time!

Akbar's Dream, p. 883.

'Look where another of our Gods, the Sun,
 Apollo, Delius, or of older use
 All-seeing Hyperion—what you will—
 Has mounted yonder ; . . . '

Lucretius, p. 162.
 Vol. II., p. 227.

The sun, that now
 Leapt from the dewy shoulders of the Earth,
 And hit the Northern hills.

The Princess, p. 196.

Sees in heaven the light of London flaring like a dreary
 dawn ;

Locksley Hall, p. 101.
 Vol. II., p. 52.

DAY

We find the story of a day woven in a most
 graphic manner into the account of Enoch Arden's
 life on the desert island :—

but every day
 The sunrise broken into scarlet shafts
 Among the palms and ferns and precipices ;
 The blaze upon the waters to the east ;

The blaze upon his island overhead ;
 The blaze upon the waters to the west ;
 Then the great stars that globed themselves in Heaven,
 The hollower-bellowing ocean, and again
 The scarlet shafts of sunrise—but no sail.

Enoch Arden, p. 134.

Vol. V., p. 32.

The fire of Heaven has killed the barren cold,
 And kindled all the plain and all the wold,
 The new leaf ever pushes off the old.

Balin and Balan, p. 376.

The fire of Heaven is on the dusty ways.
 The wayside blossoms open to the blaze.

Balin and Balan, p. 377.

And as the light of Heaven varies, now
 At sunrise, now at sunset, now by night
 With moon and trembling stars,

The Marriage of Geraint, p. 341.

Vol. III., p. 94.

The heat of noon is thus referred to

. the winds were dead for heat ;
 The noonday crag made the hand burn.

Tiresias, p. 538.

To drink the cooler air, and mark
 The landscape *winking* thro' the heat.

In Memoriam, p. 271.

Sun-steep'd at noon, and in the moon
Nightly dew-fed ;

Choric Song, p. 55.

Noon is referred to figuratively, the noonday sun being represented as a knight with such shining armour that the eyes are dazzled when looking at him :—

shone the Noonday Sun

 and Gareth's eyes had flying blots
 Before them when he turn'd from watching him.
Gareth and Lynette, p. 334.
 Vol. III., p. 77.

As when a sunbeam wavers warm
 Within the dark and dimpled beck.
The Miller's Daughter, p. 37.
 Vol. I., p. 148.

on their curls
 From the high tree the blossom wavering fell,
 And over them the *tremulous isles of light*
 Slided, they moving under shade :
The Princess, p. 205.
 Vol. IV., p. 120.

The following passages refer to morning or afternoon effects when the sun's rays fall more obliquely than at noon.

And universal Peace
 Lie like a shaft of light across the land,
 And like a lane of beams athwart the sea,
The Golden Year, p. 95.
 Vol. II., p. 31.

While the day
 Descending, struck athwart the hall, and shot
 A flying splendour out of brass and steel.

The Princess, p. 210.
 Vol. IV., p. 130.

When the thick-moted sun-beam lay
 Athwart the chambers, and the day
 Was sloping toward his western bower.

Mariana, p. 8.

and, like a creeping sunbeam, slid
 From pillar unto pillar, until she reach'd
 The gateway.

Godiva, p. 104.
 Vol. II., p. 63.

The sun casts shadows, and these vary in length
 with the height of the sun in the heavens.

Following a hundred sunsets, and the sphere
 Of westward-wheeling stars ; and every dawn
 Struck from him his own shadow on to Rome.

St. Telemachus, p. 878.

Telemachus was travelling to Rome from the
 East.

and so
 We turn'd our foreheads from the falling sun,
 And following our own shadows thrice as long
 As when they follow'd us from Philip's door,

The Brook, p. 141.
 Vol. II., p. 157.

The shadows of the convent-towers
Slant down the snowy sward,
Still creeping with the creeping hours.

St. Agnes' Eve, p. 109.

Vol. II., p. 87.

Till all the sails were darken'd in the west,
And rosed in the east : then homeward and to bed :

Sea Dreams, p. 156.

Vol. II., p. 194.

This was at evening and the sunlight was falling
in one case to the west, on the sides of the sails
turned away from the observer, which were there-
fore darkened in the other on the sides turned
towards him.

And all my life was darken'd, as I saw the white sail run,
And darken, up that lane of light into the setting sun.

The Flight, p. 553.

SUNSET AND TWILIGHT.

Here we find naturally many references.

And behind him, low in the West,
With shifting ladders of shadow and light,
And blurr'd in colour and *form*,
The sun hung over the gates of Night,
And glared at a coming storm.

The Dead Prophet, p. 572.

The sun before it sets often takes on strange
forms in consequence of the varying refractions
the light from its various portions undergoes.

Come, my friends,
'Tis not too late to seek a newer world.
Push off, and sitting well in order smite
The sounding furrows ; for my purpose holds
To sail beyond the sunset, and the baths
Of all the western stars, until I die.

Ulysses, p. 96.

Vol. II., p. 35.

till Philip, glancing up
Beheld the dead flame of the fallen day
Pass from the Danish barrow overhead ;
Enoch Arden, p. 131.

His memory long will live alone
In all our hearts, as mournful light
That broods above the fallen sun,
And dwells in heaven half the night.
To J. S., p. 63.
Vol. I., 237.

and then a paleness,
Like the wan twilight after sunset.
Becket, p. 708.

That like a silent lightning under the stars
She seem'd to divide in a dream from a band of the blest.
Maud, p. 306.

Here the sunset glow is likened to summer
lightning below the Western horizon.

till the gloom,
That follows on the turning of the world,
Darken'd the common path :

Pelleas and Ettarre, p. 442.

Poor Fancy sadder than a single star,
That sets at twilight in a land of reeds.

Early Sonnets, VII., p. 26.

Will there be dawn in West and eve in East?

Gareth and Lynette, p. 329.

Vol. III., p. 65.

ECLIPSE

During a partial eclipse of the sun, the daylight
is dimmed, as the disc is reduced to a crescent.

As when the sun, a crescent of eclipse,
Dreams over lake and lawn, and isles and capes.

The Vision of Sin, p. 120.

The shadow of His loss drew like eclipse,
Darkening the world.

Idylls of the King. Dedication, p. 308.

Vol. III., p. 7.

SECTION VI

SUNLIGHT COLOURS

The Cause of Colour.—Colours at Dawn and Sunrise.—
Colours at Sunset.

THERE are many references to the colour of the sky and clouds at different hours of the day and under different conditions.

At night in the absence of the sun there is no light and therefore no atmospheric colour except the blue of the sky.

Night, as black as a raven's feather ;
Harold, p. 675.

Dark-blue the deep sphere overhead,
Distinct with vivid stars inlaid,
Recollections of the Arabian Nights, p. 10.

How oft the purple-skirted robe
Of twilight slowly downward drawn,
As thro' the slumber of the globe
Again we dash'd into the dawn !
The Voyage, p. 117.
Vol. II., p. 119.

And above
Broaden the glowing isles of vernal blue.
The Progress of Spring, p. 866.
The intervals between clouds.

THE CAUSE OF COLOUR

At noon the light is white ; at sunrise and sunset we deal with warm colours. Tennyson gives us the whole philosophy of this in a single line.

The low sun makes the colour :
Lancelot and Elaine, p. 398.
Vol. III., p. 207.

A low sun necessitates that the sunlight must travel through a much greater thickness of atmosphere, the particles in which, by scattering and absorption, filch from the white sunlight some of its constituent colours, so that only certain colours remain, and those generally warm ones.

Damsels in divers colours like the cloud
Of sunset and sunrise.
Pelleas and Ettarre, p. 434.
Vol. III., p. 295.

While, however, in the daytime the light is generally white, as has been stated, in stormy and especially in thundery weather colour may be introduced by varying atmospheric conditions.

The green malignant light of coming storm.
The Princess, p. 182.

During the daylight a clear sky is of blue colour.

After volcanic eruptions the air is filled with more light-absorbing particles than usual, and in this condition the colour effects are much more strongly pronounced. In 1883 after the eruption and ejection of dust at Krakatoa these effects were most remarkable and as we learn suggested the following.

Had the fierce ashes of some fiery peak
Been hurl'd so high they ranged about the globe?
For day by day, thro' many a blood-red eve,
In that four-hundredth summer after Christ,
The wrathful sunset glared against a cross
Rear'd on the tumbled ruins of an old fane
No longer sacred to the Sun, and flamed
On one huge slope beyond.

St. Telemachus, p. 878.
E. E., Vol. VII., p. 381.

Smoke produces the same effect:—

Last a heathen horde,
Reddening the sun with smoke and earth with blood.
The Coming of Arthur, p. 309.
Vol. III., p. 14.

The colours we have referred to as being allowed to pass are those in the red end of the band of spectrum colours; this *cloud* colour is often associated with a greenish or yellow-green colour

of the sky which is often strengthened subjectively by contrast with the red. Tennyson has been fortunate in lighting on the word *daffodil* for describing this colour. It is only at or near sunrise or sunset that anything like this tint can be seen.

For a breeze of morning moves,
And the planet of Love is on high,
Beginning to faint in the light that she loves
On a bed of daffodil sky.

Maud, p. 300.
Vol. IV., p. 218.

COLOURS AT DAWN AND SUNRISE

The following are special references to sunrise, showing the shadings of the dawn and the change of colour with the advancing stages.

From day to day the sunrise may vary in character owing to changes in atmospheric conditions. Here for instance we have reference to :

A pale dawn :

And when the pale and bloodless east began
To quicken to the sun,

The Marriage of Geraint, p. 349.
Vol. III., p. 114.

Till cold winds woke the gray-eyed morn,

Mariana, p. 7.

The first gray streak of earliest summer-dawn,
 The last long stripe of waning crimson gloom,
 As if the late and early were but one—

The Ancient Sage, p. 551.

Far off they saw the silver-misty morn
 Rolling her smoke about the Royal mount.

Gareth and Lynette, p. 320.

Vol. III., p. 44.

A golden dawn :

Morn in the white wake of the morning star
 Came furrowing all the orient into gold.

The Princess, p. 180.

Vol. IV., p. 51.

An amber morn :

What time the *amber* morn
 Forth gushes from beneath a low-hung cloud.

Ode to Memory, p. 12.

Vol. I., p. 53.

Red dawns :

The dim red morn had died, her journey done,
 And with dead lips smiled at the twilight plain,
 Half-fall'n across the threshold of the sun,
 Never to rise again.

A Dream of Fair Women, p. 57.

Vol. I., p. 219.

and morn
 Has lifted the dark eyelash of the Night
 From off the rosy cheek of waking Day.

Akbar's Dream, p. 883.

The voice and the Peak
Far into heaven withdrawn,
The lone glow and long roar
Green-rushing from the *rosy thrones* of dawn !
The Voice and the Peak, p. 240.
Vol. II., p. 308.

Risest thou thus, dim dawn, again,
So loud with voices of the birds,
So thick with lowings of the herds,
Day, when I lost the flower of men ;
Who tremblest thro' thy *darkling red*.
On yon swoll'n brook that bubbles fast
By meadows breathing of the past.
In Memoriam, p. 275.

And lo ! the blood-red light of dawn
Flared on her face.
Lancelot and Elaine, p. 412.
Vol. III., p. 241.

All in a fiery dawning wild with wind.
Lancelot and Elaine, p. 412.
At last the sunrise :
Red as the rising sun with heathen blood.
Lancelot and Elaine, p. 400.
Vol. III., p. 214.

COLOURS AT SUNSET

The king of day hath steeped from off his throne,
Flung by the golden mantle of the cloud,
And sets, a naked fire.
The Foresters, p. 814.

Rich was the *rose* of sunset there, as we drew to the land ;

The Wreck, p. 544.

For look, the sunset, south and north,

Winds all the vale in *rosy* folds.

The Miller's Daughter, p. 39.

Last night, when the sunset *burn'd*

On the blossom'd gable-ends

At the head of the village street.

Maud, p. 291.

Vol. IV., p. 176.

Till all the crimson changed, and past

Into deep orange o'er the sea.

Mariana in the South, p. 30.

Vol. I., p. 33.

Move eastward, happy earth, and leave

Yon *orange* sunset waning slow :

From fringes of the faded eve,

O, happy planet, eastward go ;

Till over thy dark shoulder glow

Thy silver sister-world, and rise

To glass herself in dewy eyes

That watch me from the glen below.

The Eagle. Fragment, p. 119.

Vol. II., p. 129.

Where, far from noise and smoke of town,

I watch the twilight falling *brown*

All round a careless-order'd garden

Close to the ridge of a noble down.

To the Rev. F. D. Maurice, p. 234.

Vol. II., p. 283.

And o'er them many a flowing range
Of vapour buoy'd the crescent-bark,
And, rapt thro' many a *rosy* change,
The twilight died into the dark.

The Day Dream, p. 107.
Vol. II., 76.

High up in heaven the hall that Merlin built,
Blackening against the *dead-green* stripes of even.
Pelleas and Ettarre, p. 442.
Vol. III., p. 315.

In stormy weather the sunset may be as colourless as the sunrise :

The *placid* gleam of sunset after storm !
The Ancient Sage, p. 549.

the owls
Wailing had power upon her, and she mixt
Her fancies with the *sallow-rifted* glooms
Of evening, and the moanings of the wind.
Lancelot and Elaine, p. 412.
Vol. III., pp. 239-240.

When the sun is setting over the sea a path of red sunset-light is formed by reflection; this is very poetically referred to as an "Ocean-lane of fire." The rays produced by the sunlight breaking through clouds or mountains near or below the horizon and illuminating the misty air, after sunset is termed "pillar'd light" :

How oft we saw the Sun retire,
 And burn the threshold of the night,
 Fall from his Ocean-lane of fire,
 And sleep beneath his pillar'd light!

The Voyage, p. 117.

Vol. II., p. 119.

In the following a tropical sunset is described :

Where some refulgent sunset of India
 Streams o'er a rich ambrosial ocean isle,
 And crimson-hued the stately palm-woods
 Whisper in odorous heights of even.

Alcaïcs, p. 243.

Vol. II., p. 320.

Reflected sunset-light is here introduced.

From a river and mountain tops :

They saw the *gleaming* river seaward flow
 From the inner land : far off, three mountain-tops,
 Three silent pinnacles of aged snow,
 Stood sunset-flush'd : and, dew'd with showery drops,
 Up-clomb the shadowy pine above the woven copse.
 The charmed sunset linger'd low adown
 In the red West :

The Lotos-Eaters, p. 54.

Vol. I., p. 208.

From a lake—What an admirable simile of the
 Eagle-owl's eye :

in the deeps whereof a mere,
Round as the red eye of an Eagle-owl,
Under the half-dead sunset glared ;

Gareth and Lynette, p. 330.

The effect of the twilight hour on the animal
and vegetable world is thus referred to :

The town lay still in the low sun-light,
The hen cluckt late by the white farm gate,
The maid to her dairy came in from the cow,
The stock-dove coo'd at the fall of night,
The blossom had open'd on every bough ;
O joy for the promise of May, of May.

The Promise of May, p. 778.

SECTION VII

THE MOON AND MOONLIGHT

The phases of the moon—The winter moon—Lunar halos—
Moonrise and set—Moonlight on water—The moon a
dead world.

THE PHASES OF THE MOON.

To those who are not perfectly well acquainted with the moon's motion round the earth it is recommended that a diagram showing the moon's phases during the month be carefully studied.*

Only in this way can the marvellous accuracy of the references be appreciated. Years ago—things are better now—moons in pictures were often in impossible places or turned the wrong way.

Tennyson carefully indicates that in one-half of her orbit the moon is gathering light, and in the other decreasing it, and he uses the words *in-crescent* and *de-crescent* moon.

* Such a diagram is given in Lockyer's *Elementary Lessons in Astronomy*, Fig. 22.

Moon, you fade at times
From the night.
Young again you grow
Out of sight.
Silver crescent-curve
Coming soon,
Globe again, and make
Honey Moon.

The Ring, p. 851.

Then, ere the silver sickle of that month
Became her golden shield, I stole from court
The Princess; a Medley, p. 170.
Vol. IV., p. 23.

And bristles all the brakes and thorns
To yon hard crescent, as she hangs
Above the wood which grides and clangs
Its leafless ribs and iron horns
In Memoriam, p. 278.
Vol. V., p. 167.

What time the mighty moon was gathering light,
Love and Death, p. 17.

but ere the night we rose
And saunter'd home beneath a moon, that, just
In crescent, dimly rain'd about the leaf
Twilights of airy silver,
Audley Court, p. 81.
Vol. I., p. 294.

And April's crescent glimmer'd cold,
The Miller's Daughter, p. 37.

68 THE MOON AND MOONLIGHT

. sent,
Between the increscent and decrescent moon,
Arms for her son,

Garth and Lynette, p. 326.
Vol. III., p. 57.

When the sun is on one side of the earth and the moon on the other, the illuminated half of the moon is presented to us, we have full moon ; and at these times both luminaries may be visible on the horizon, one E. the other W.

They sat them down upon the yellow sand,
Between the sun and moon upon the shore ;
The Lotos-Eaters, p. 54.
Vol. I., p. 208.

In the night, and nigh the dawn,
And while the moon was setting.
Forlorn, p. 860.

Faints like a dazzled morning moon.
Fatima, p. 39.

The harvest moon is the ripening of the harvest.
Becket, p. 697.

The harvest moon is the full moon which falls within a fortnight of Sept. 23. It rises at nearly the same time on successive evenings, as her path then is but little inclined to the horizon.*

* See Lockyer's *Elementary Lessons in Astronomy*, Fig. 42.

for all his face was white
And colourless, and like the wither'd moon
Smote by the fresh beam of the springing east ;
The Passing of Arthur, p. 473.
Vol. III., p. 394.
Morte d'Arthur, p. 71.
Vol. I., p. 268.

The moon above the horizon at dawn is the
decreascent (withered) moon, and it appears fainter
as the sunlight increases.

THE WINTER MOON

The moon is more prominent in winter, as the
nights are then longer and darker.

The mellow'd reflex of a winter moon ;
Isabel, p. 7.

And on a sudden, lo ! the level lake,
And the long glories of the winter moon.
Morte d'Arthur, p. 71.
Vol. I., p. 267.

Thus drew he forth the brand Excalibur,
And o'er him, drawing it, the winter moon,
Brightening the skirts of a long cloud, ran forth
And sparkled keen with frost against the hilt :
Morte d'Arthur, p. 68.

LUNAR HALOS

The coloured brightness sometimes seen round the moon is due to the refraction and reflection of light by snow crystals in the upper air when cirrus or cirro-stratus clouds are present.

Like the tender amber round,
Which the moon about her spreadeth,
Moving thro' a fleecy night.

Margaret, p. 21.

MOONRISE AND SET

And rise, O Moon, from yonder down,
Till over down and over dale
All night the shining vapour sail
And pass the silent-lighted town,
The white-faced halls, the glancing rills,
And catch at every mountain head,
And o'er the friths that branch and spread
Their sleeping silver thro' the hills ;
And touch with shade the bridal doors,
With tender gloom the roof, the wall ;
And breaking let the splendour fall
To spangle all the happy shores
By which they rest, and ocean sounds,
And, star and system rolling past,

In Memoriam, p. 286.

Vol. V., p. 196.

The moon was falling *greenish* thro' a rosy glow.

Locksley Hall, p. 564.

This never happens with the sun, in consequence of its more intense light. The greenish colour is subjective or due to contrast with the rosy glow.

MOONLIGHT ON WATER

A doubtful smile dwelt like a clouded moon
In a still water :

The Princess, p. 208.

The brook shall babble down the plain,
At noon or when the lesser wain
Is twisting round the polar star ;
Uncared for, gird the windy grove,
And flood the haunts of hern and crake ;
Or into silver arrows break
The sailing moon in creek and cove.

In Memoriam, p. 276.

THE MOON A DEAD WORLD

Astronomers consider that the moon is a "dead" world, that is, that it has run through the planetary stages depending upon the presence of an atmosphere such as that of the earth. This conclusion has been arrived at because indications of the presence of an atmosphere are generally supposed to be wanting, although some statements have been made suggesting a tenuous one, and that slight changes are observable in the lunar features.

72 THE MOON AND MOONLIGHT

Warless? war will die out late then. Will it ever? late or soon?

Can it, till this outworn earth be dead as yon dead world the moon?

Dead the new astronomy calls her

Dead, but how her living glory lights the hall, the dune, the grass!

Yet the moonlight is the sunlight, and the sun himself will pass.

Locksley Hall. Sixty Years After, p. 565.

SECTION VIII

THE PLANETS

Venus as a morning star—Venus as an evening star—Venus seen in the daytime—Mars—Saturn—Neptune—The earth as a planet.

It is little to be wondered at that among the planets Venus takes first place in the poet's mind. When in certain positions it is the brightest of all the planets, transcending in brilliancy the brightest stars. Nor is this all : as its orbit round the sun is within that of the earth and next to it, it appears as a morning or evening star according as it is west or east of the sun. As a morning star it has been named Phosphor or Lucifer, as an evening one Hesper.

Sweet Hesper-Phosphor, double name
For what is one, the first, the last,
Thou, like my present and my past,
Thy place is changed ; thou art the same.

In Memoriam, p. 282.

Vol. V., p. 181.

We may deal with the references to these separately.

VENUS AS MORNING STAR.

Bright Phosphor, fresher for the night,
 By thee the world's great work is heard
 Beginning, and the wakeful bird ;
 Behind thee comes the greater light :
In Memoriam, p. 282.

All night no ruder air perplex
 Thy sliding keel, till Phosphor, bright
 As our pure love, thro' early light
 Shall glimmer on the dewy decks.
In Memoriam, p. 250.
 Vol. V., p. 60.

Rode till the star above the wakening sun,

 Glanced from the rosy forehead of the dawn.

 "O sweet star,
 Pure on the virgin forehead of the dawn !"
Pelleas and Ettarre, p. 441.

O morning star that smilest in the blue,
 O star, my morning dream hath proven true,
Gareth and Lynette, p. 333.
 Vol. III., p. 76.

Clear honour shining like the dewy star
 Of dawn,
Gareth and Lynette, p. 322.
 Vol. III., p. 50.

Then, as the white and glittering star of morn
Parts from a bank of snow, and by and by
Slips into golden cloud,

The Marriage of Geraint, p. 352.
Vol. III., p. 121.

VENUS AS EVENING STAR

Sunset and evening star,
Crossing the Bar, p. 894.

And, while the star of eve was drawing light
From the dead sun,

The Death of Ænone, p. 877.

Venus, like the other planets, shines by reflected
sunlight.

And last, returning from afar,
Before the *crimson-circled* star
Had fall'n into her father's grave,

In Memoriam, p. 271.
Vol. V., p. 143.

This is probably a reference to the crimson light
of sunset by which the planet was surrounded.

Sad Hesper o'er the buried sun
And ready, thou, to die with him,
Thou watchest all things ever dim
And dimmer, and a glory done :

In Memoriam, p. 281.

Low-throned Hesper is stayed between the two peaks.

Leonine Elegiacs, p. 3.

There all in spaces rosy-bright
 Large Hesper glitter'd on her tears,
 And deepening through the silent spheres
 Heaven over Heaven rose the night.
Mariana in the South, p. 31.

—the moon was falling greenish thro' a rosy glow
 Venus near her ! Smiling downward at this earthlier earth
 of ours,
 Closer on the Sun, perhaps a world of never fading flowers.

 Hesper—Venus—were we native to that splendour or in
 Mars,
 We should see the Globe we 'groan in, fairest of their
 evening stars.

Locksley Hall. Sixty Years After, p. 565.

From Mars the Earth would take the place
 Venus occupies with us, and would be seen
 alternately as a morning or evening star.

Like a setting star
 Mixt with the gorgeous west the light-house shone,
 And silver-smiling Venus ere she fell
 Would often loiter in her balmy blue,
 To crown it with herself.

The Lover's Tale, p. 477.

VENUS SEEN IN THE DAYTIME.

At one part of her orbit, the amount of reflecting surface and the planet's nearness are such that she appears at her greatest brilliancy. At this time she is visible in full daylight.

The world
Was all so clear about him, that he saw
The smallest rock far on the faintest hill,
And even in high day the morning star.

The Coming of Arthur, p. 310.

Vol. III., p. 17.

MARS

That Mars has two moons was discovered as lately as 1877. They are so minute that they can only be seen in the largest telescopes. They present remarkable peculiarities.

The rotation period of Mars is $24\frac{1}{2}$ hours, while the revolution periods of the two satellites are $7\frac{1}{2}$ hours and 30 hours respectively, so that one of them travels faster than the surface of the planet. Their orbits lie very near the planet, for while the diameter of Mars is 4,000 miles, the nearest moon is less than 4,000 miles from the surface of its primary, and the farthest only 12,000 miles, in round numbers.

These peculiarities are not far removed from those of the moons the discovery of which is

chronicled in *Gulliver's Travels* as a *tour de force* of the improbable !

"They have likewise discovered two lesser stars, or satellites, which revolve about Mars, whereof the innermost is distant from the centre of the primary planet exactly three of his diameters and the outermost five ; the former revolves in the space of ten hours, and the latter in twenty-one and a half ; so that the squares of their periodical times are very near in the same proportion with the cubes of their distance from the centre of Mars, which evidently shows them to be governed by the same law of gravitation that influences the other heavenly bodies."

Gulliver's Travels. A Voyage to Laputa, Ch. 3.

By Jonathan Swift.

Dent's Edition, p. 157.

She saw the snowy poles and moons of Mars,
That mystic field of drifted light
In mid Orion and the married stars.

E. E., Vol. 1, p. 369.

and pointed to Mars
As he glow'd like a ruddy shield on the Lion's breast.

Maud, p. 307.

SATURN

Saturn, like most of the other planets, has moons, but its most special characteristic is its wonderful ring system, and so this is referred to.

Still as, while Saturn whirls, his stedfast shade
Sleeps on his luminous ring.

The Palace of Art, p. 44.

NEPTUNE

The discovery of Neptune in 1846 is thus referred to in a poem written in 1850.

A time to sicken and to swoon,
 When Science reaches forth her arms
 To feel from world to world, and charms
 Her secret from the latest moon ?

In Memoriam, p. 253.

Vol. V., p. 72.

 THE EARTH AS A PLANET.

Forward, forward let us range
 Let the great world spin for ever down the ringing
 grooves of change.

Locksley Hall, p. 103.

Vol. II., p. 59.

The idea that the earth was a sphere lay at the base of the cosmogony accepted by Dante (1300). It was the work, however, of the circumnavigators, chief among them Columbus (1500), to establish the fact in after years. Till the sphere was established the known earth's surface was considered to be an extended plane,—“the earth was flat.”

And so this earth was flat :
 Some cited old Lactantius : could it be
 That trees grew downward, rain fell upward, men
 Walk'd like the fly on ceilings ?

Columbus, p. 525.

Showing courts and kings a truth the babe
 Will suck in with his milk hereafter—earth
 A sphere.

Columbus, p. 525.

As the earth is a sphere, the horizon is the boundary of the spherical surface we can see, and moving objects, like ships, are observed to disappear over it.

The past is like a travell'd land now sunk
Below the horizon.

The Cup, p. 762.

Fresh as the first beam glittering on a sail,
That brings our friends *up from the under world*,
Sad as the last which reddens over one
That sinks with all we love *below the verge*.

The Princess, p. 186.

Ev'n to the last dip of the vanishing sail
She watch'd it.

Enoch Arden, p. 128.

Vol. V., p. 18.

Our earth is a planet travelling round the sun, the nearest star, with the other suns almost infinitely removed ; so all the luminous and colour phenomena on the earth are dominated by one sun alone. But in the case of double stars the planets revolving round them have their luminous and colour phenomena more complex, especially if the two suns are of different colours. Tennyson has considered this question.

Like some conjectured planet in mid-heaven
Between two suns, and drawing down from both
The light and genial warmth of double day.

To Princess Beatrice, p. 576.

SECTION IX

COMETS AND METEORS

Comets—Meteors.

The new astronomy teaches us that there is the closest connection between comets and meteors : the former being made up of bodies—meteorites—which, when they enter our atmosphere singly, give rise to what are termed shooting-stars, meteors or bolides, and in large quantity to meteor showers or showers of shooting-stars.

In November 1866 the most wonderful exhibition of the latter phenomenon which anyone now living has had an opportunity of seeing took place. It is unfortunate that the poet missed it.

COMETS

Since 1850 there have been two majestic comets, and only two, visible in the northern hemisphere ; one in 1858, that of Donati, and

another in 1861. Tennyson seems to have seen the first named, as the following may refer to what happened when the comet passed over Arcturus, the star being seen near the head of the comet.

First Courtier. Lo ! There once more—this is the
seventh night !

Yon grimly-glaring, treble-brandish'd scourge of England !

Second Courtier. Horrible !

First Courtier. Look you, there's a star
That dances in it as mad with agony !

Harold, p. 653.

E.E., Vol. VIII., p. 353.

The old idea that comets presaged disasters is thus referred to in connection with the return of Halley's comet at the time of the Norman Conquest.

Lord Leofwin, dost thou believe, that these
Three rods of blood-red fire up yonder mean
The doom of England and the wrath of Heaven ?

Harold, p. 653.

Vol. VI., p. 209.

Why not the doom of all the world as well ?
For all the world sees it as well as England.
These meteors came and went before our day,
Not harming any : it threatens us no more
Than French or Norman.

Harold, p. 654.

Vol. VI., p. 213.

METEORS

Now slides the silent meteor on, and leaves
A shining furrow, as thy thoughts in me.

The Princess; A Medley, p. 213.
Vol. IV., p. 142.

And o'er them many a sliding star,
And many a merry wind was borne,
And, stream'd thro' many a golden bar,
The twilight melted into morn.

The Departure, p. 107.
Vol. II., p. 75.

Arthur's harp tho' summer-wan,
In counter motion to the clouds, allured
The glance of Gareth dreaming on his liege.
A star shot.

Gareth and Lynette, p. 339.
Vol. III., p. 88.

Sole as a flying star shot thro' the sky
Above the pillar'd town.

The Palace of Art, p. 46.
Vol. I., p. 181.

As often thro' the purple night,
Below the starry clusters bright,
Some bearded meteor, trailing light,
Moves over still Shalott.

The Lady of Shalott, p. 29.

When the meteorites are large enough to withstand the volatilization caused by the heat produced by friction in their passage through the atmosphere they reach the earth's surface as solid bodies.

Lay like a new-fall'n meteor on the grass

The Princess, p. 206.

SECTION X

THE AIR.

Winds at dawn—The various qualities of the winds—Wind on water and standing corn—Wind-drifts—Wind storms—Lightning and thunder-storms—The Aurora—Vapour and cloud—Rain—The Rainbow—Mirage.

Atmospheric phenomena are largely drawn upon ; there are many references to all classes of meteorological conditions, now exquisitely descriptive, now used as similes. Winds, gentle and stormy, clouds whether as “isles of light” in a blue sky or torn with thunder-storm, the forms of water from vapour to thunder showers, aurora and mirage, all find a place.

We will begin with winds.

WINDS AT DAWN.

As a rule the wind lulls at night ; dawn is the period of greatest stillness when the winds are dumb, hence a strong wind before the dawn is

eloquently suggestive of disturbance and unrest.
—W. N. S.

While the amorous, odorous wind
Breathes low between the sunset and the morn ;
Eleánore, p. 24.

till an hour,
When waken'd by the wind which with full voice
Swept bellowing thro' the darkness on to dawn,
Gareth and Lynette, p. 320.
Vol. III., p. 44.

Risest thou thus, dim dawn, again,
And howlest, issuing out of night,
With blasts that blow the poplar white,
In Memoriam, p. 265
Vol. V., p. 119.

High with the last line scaled her voice, and this,
All in a fiery dawning wild with wind
That shook her tower,
Lancelot and Elaine, p. 412.
Vol. III., p. 240

I.

Morning arises stormy and pale,
No sun, but a wannish glare
In fold upon fold of hueless cloud,
And the budded peaks of the wood are bow'd
Caught and cuff'd by the gale :
I had fancied it would be fair.
Maud, A Monodrama, p. 291.
Vol. IV., p. 176.

VARIOUS QUALITIES OF THE WIND 87

A characteristic night-breeze in valleys on clear nights is the light surface wind caused by the downward flow of air cooled by the ground. It may become a vigorous wind, but with the rising of the sun its cause disappears and it dies down.—
W. N. S.

A breeze began to tremble o'er
The large leaves of the sycamore,
And fluctuate all the still perfume,
And gathering freshlier overhead,
Rock'd the full-foliaged elms, and swung
The heavy-folded rose, and flung
The lilies to and fro, *and said*
'*The dawn, the dawn,*' and died away ;
And East and West, without a breath,
Mix't their dim lights, like life and death,
To broaden into boundless day.
In Memoriam, p. 274.

The coldest hour precedes the dawn :—

Till in the cold wind that foreruns the morn,
Guinevere, p. 458.
Vol. III., p. 354.

THE VARIOUS QUALITIES OF THE WINDS.

The south wind is a warm one :—

Far along the world-wide whisper of the south-wind rushing
warm,

Locksley Hall, p. 101.

The west wind brings rain :—

but had rather

Breathe the free wind from off our Saxon downs,
Tho' charged with all the wet of all the west.

Harold, p. 664.
Vol. VI., p. 251.

And the grass will grow when I am gone,
And the wet west wind and the world will go on.

The Window, p. 245.
Vol. II. p. 331.

The north wind is cold :—

but when the dolorous day

Grew drearier toward twilight falling, came
A bitter wind, clear from the North, and blew
The mist aside, and with that wind the tide
Rose,

The Passing of Arthur, p. 469
Vol. III., p. 384.

Fiercely flies

The blast of North and East, and ice
Makes daggers at the sharpen'd eaves,

In Memoriam, p. 278.
Vol. V., p. 167.

Yell'd as when the winds of winter tear an oak
on a promontory.

Boödicea, p. 242.
Vol. II., p. 318.

WIND ON WATER AND STANDING CORN.

Here are references to the action of wind on water :—

But bland the smile that like a 'wrinkling' wind
On glassy water drove his cheek in lines ;
The Princess, p. 171.

The brows unwrinkled as a summer mere.
Harold, p. 671.

The somewhat similar result of the action of wind on corn has also been noticed.

and I sat down and wrote,
In such a hand as when a field of corn
Bows all its ears before the roaring East ;
The Princess, p. 173.

it fell
Like flaws in summer laying lusty corn :
The Marriage of Geraint, p. 352.

This word *flaws*, rarely used, denotes sudden gusts of wind.

WIND-DRIFTS.

Beyond the lodge the city lies,
Beneath its drift of smoke ;
The Talking Oak, p. 89.
Vol. II., p. 11.

THE AIR

And all the land from roof and rick,
In drifts of smoke before a rolling wind,
Stream'd to the peak, and mingled with the haze
And made it thicker ;

The Coming of Arthur, p. 315.
Vol. III., pp. 29-30.

and over them the sea-wind sang
Shrill, chill, with flakes of foam.

The Passing of Arthur, p. 470.
Vol. III., p. 387.

Till Sir Kay, the seneschal, would come
Blustering upon them, like a sudden wind
Among dead leaves, and drive them all apart.

Gareth and Lynette, p. 326.
Vol. III., p. 57.

WIND-STORMS.

Great Goddess, whose storm voice
Unsockets the strong oak, and rears his root
Beyond his head, and strows our fruits and lays
Our golden grain, and runs to sea and makes it
Foam over all the fleeted wealth of kings
And peoples, hear.

The Cup, p. 763.

Fiercely flies
The blast of North and East, and ice
Makes daggers at the sharpen'd eaves,
And bristles all the brakes and thorns
To yon hard crescent, as she hangs
Above *the wood which grides and clangs*
Its leafless ribs and iron horns
Together,

In Memoriam, p. 278.

LIGHTNING AND THUNDER-STORMS 91

There is perfect calm in the centre of a whirlwind :—

For blasts would rise and rave and cease,
But whence were those that drove the sail
Across the whirlwind's heart of peace,
And to and thro' the counter gale ?

The Voyage, p. 118.

E. E., Vol. II., p. 352.

LIGHTNING AND THUNDER-STORMS.

Turning now to those quotations which deal with thunder and lightning we will begin with the reference to the fact that thunder follows the flash :—

And as the lightning to the thunder
Which follows it, riving the spirit of man,
Making earth wonder,

The Poet, p. 14.

Forked lightning always indicates a near storm; sheet- or summer-lightning being the reflection of one below the horizon, or hidden by clouds, arises from a remote one :—

No pale sheet-lightnings from afar, but forked
Of the near storm,

Aylmer's Field, p. 153.

Saw God divide the night with flying flame,
 And thunder on the everlasting hills.
A Dream of Fair Women, p. 60.

Allusion to an approaching storm :—

Like sheet-lightning,
 Ever brightening
 With a low melodious thunder ;
The Poet's Mind, p. 15.

Many of us have noticed the following !

The lightning flash atween the rains,
Rosalind, p. 22.

Tennyson fully realised that it is the electricity
 in the *flash* that forms the danger of these
 storms :—

It is the flash that murders, the poor thunder never harm'd
 head.

Harold, p. 660.

As comes a pillar of electric cloud,
 Flaying the roofs and sucking up the drains.
The Princess, p. 203.

... Great goddess whose quick flash splits
 The mid-sea mast, and rifts the tower to the rock,
 And hurls the victor's column down with him
 That crowns it, hear

The Cup, p. 763.

Nor ever lightning char thy grain,
 But, rolling as in sleep,
 Low thunder brings the mellow rain,
 That makes thee broad and deep.

The Talking Oak, p. 92.

In the following we have "thunder" taken in a general sense, the word "storm" being omitted.

Knights were thwack'd and riven, and hew'd
 Like broad oaks with thunder.

The Tourney, p. 892.

Scarce had she ceased, when out of heaven a bolt
 (For now the storm was close above them) struck,
 Furrowing a giant oak, and javelining
 With darted spikes and splinters of the wood
 The dark earth round.

Merlin and Vivien, p. 395.
 Vol. III., pp. 199-200.

and once the flash of a thunderbolt—
 Methought I never saw so fierce a fork—
 Struck out the streaming mountain-side, and show'd
 A riotous confluence of watercourses
 Blanching and billowing in a hollow of it,
 Where all but yester-eve was dusty-dry.

Lucretius, p. 161.

Thou from a throne
 Mounted in heaven will shoot into the dark
 Arrows of lightnings. I will stand and mark.

Early Sonnets. To J. M. K., p. 25.

THE AIR

Thunder, a flying fire in heaven, a murmur
heard aërially,

Boadicea, p. 241.

It has been demonstrated that lightning flashes go from earth to the sky under certain conditions.

Ah, Thomas,
The lightnings that we think are only Heaven's
Flash sometimes out of earth against the heavens.

Becket, p. 740.

St. Elmo's Fire is another phenomenon produced by electricity.

And made the single jewel on her brow
Burn like the mystic fire on a mast-head,
Prophet of storm :

The Princess, p. 190.

Vol. IV., p. 77.

Tennyson points out that a lightning flash and the sending of a message along a deep sea cable are due to the same cause, an electric current.

Thunderless lightnings striking under sea
From sunset and sunrise of all thy realm,

To the Queen, p. 474.

Vol. III., p. 401.

THE AURORA

It is not a little singular that the aurora attracted little of Tennyson's notice. These are the only passages we have come across which may refer to it.

The great brand
 Made lightnings in the splendour of the moon,
 And flashing round and round, and whirl'd in an arch,
 Shot like a streamer of the northern morn,
 Seen where the moving isles of winter shock
 By night, with noises of the northern sea.

Morte d'Arthur, p. 70.

Vol. I., p. 265.

On her pallid cheek and forehead came a colour and a light,
 As I have seen the rosy red flushing in the northern night.

Locksley Hall, p. 98.

VAPOUR AND CLOUD

Deep on the convent-roof the snows
 Are sparkling to the moon :
My breath to heaven like vapour goes :
 May my soul follow soon !

St. Agnes' Eve, p. 109.

Vol. II., p. 87.

Fine as ice-ferns on January panes
 Made by a breath.

Aylmer's Field, p. 146.

Vol. II. p. 169.

Make Thou my spirit pure and clear
 As are the frosty skies.

St. Agnes' Eve, p. 109.

During frost the aqueous vapour in the air is
 reduced.

Comes a vapour from the margin, blackening over
 heath and holt,
 Cramming all the blast before it, in its breast
 a thunderbolt.

Locksley Hall, p. 103
 Vol. II. p. 60.

A thunder-storm is often introduced by a strong
 squall of wind, which seems to blow from under
 the black thunder-cloud.—W.N.S.

As the storm breaks, the lower edge of the cloud
 seems ragged.

Like a thunder cloud
 Whose skirts are loosen'd by the breaking storm,
Geraint and Enid, p. 361.
 Vol. III., p. 143.

The ragged rims of thunder brooding low,
 With shadow-streaks of rain.
Palace of Art, p. 45.

A storm often follows a period of ominous calm.

A storm was coming, but the winds were still,
Merlin and Vivien, p. 380.
 Vol. III., p. 164.

The clouds themselves are children of the sun.
The Ancient Sage, p. 551.

Clouds low down near the horizon are some-
 times indistinguishable from distant hills.

The cloud may stoop from heaven and take the shape,
 With fold to fold, of mountain or of cape ;
The Princess, p. 210.
 Vol. IV., p. 133.

The passing of the thunder shower.

Often o'er the sun's bright eye
Drew the vast eyelid of an inky cloud,
And lash'd it at the base with slanting storm ;
Or in the noon of mist and driving rain,
When the lake whiten'd and the pinewood roar'd,
And the cairn'd mountain was a shadow, sunn'd
The world to peace again :

Merlin and Vivien, p. 390.
Vol. III., p. 188.

As thunder-clouds that, hung on high,
Roof'd the world with doubt and fear,
Floating thro' an evening atmosphere,
Grow golden all about the sky.

Early Poems. Eleänore, p. 24.

But never light and shade
Coursed one another more on open ground
Beneath a troubled heaven.

The Marriage of Geraint, p. 349.

Would dote and pore on yonder cloud
That rises upward always higher,
And onward drags a labouring breast,
And topples round the dreary west,
A looming bastion fringed with fire.

In Memoriam, p. 251.
Vol. V., p. 66.

It was the time when lilies blow,
And clouds are highest up in air,
Lady Clare, p. 114.
Vol. II., p. 106.

RAIN

The vapours weep their burthen to the ground,
Tithonus, p. 96.
 Vol. II., p. 37.

The origin of clouds—

This wealth of waters might but seem to draw
 From yon dark cave, but, son, the source is higher,
 Yon summit half-a-league in air—and higher,
 The cloud that hides it—higher still, the heavens
 Whereby the cloud was moulded, and whereout
 The cloud descended. Force is from the heights.
The Ancient Sage, p. 548.

The distant gleam of sun in rainy weather—

then with a smile, that look'd
 A stroke of cruel sunshine on the cliff,
 When all the glens are drown'd in azure gloom
 Of thunder-shower,
The Princess, p. 194.

Great Goddess,
 Whose winter-cataracts find a realm and leave it
 A waste of rock and ruin, hear.
The Cup, p. 763.

Referring to Chaucer—

And, for a while, the knowledge of his art
 Held me above the subject, *as strong gales*
Hold swollen clouds from raining, tho' my heart,
 Brimful of those wild tales,
 Charged both mine eyes with-tears.
A Dream of Fair Women, p. 57.
 Vol. I., p. 217.

Rain sometimes holds off in a south-west wind
until the wind veers and lulls.—W. N. S.

THE RAINBOW

The beams, that thro' the Oriel shine,
Make prisms in every carven glass,
The Day-Dream, p. 105.
Vol. II., p. 67.

From out my sullen heart a power
Broke like the rainbow from the shower,
The Two Voices, p. 36.
Vol. I., p. 143.

From all things outward you have won
A tearful grace, as though you stood
Between the rainbow and the sun.
Margaret, p. 21.
Vol. I., p. 88.

O rainbow with three colours after rain,
Gareth and Lynette, p. 336.

Are only like
The rainbow of a momentary sun.
The Foresters, p. 811.

Run thro' the peopled gallery which half round
Lay like a rainbow fall'n upon the grass,
Lancelot and Elaine, p. 402.
Vol. III., p. 218.

Her light makes rainbows in my closing eyes,
The Progress of Spring, p. 866.

Whistle back the parrot's call, and leap the rainbows
of the brooks.
Locksley Hall, p. 102.
Vol. II., p. 58.

That floating as they fell
Lit up a torrent-bow.
The Palace of Art, p. 45.

And every dew-drop paints a bow.
In Memoriam, p. 282.
E. E., Vol. III., p. 262.

MIRAGE

'Son, I have seen the good ship sail
Keel upward and mast downward in the heavens,
And solid turrets topsy-turvy in air :
And here is truth ;'
Gareth and Lynette, p. 321.
Vol. III., p. 47.

SECTION XI

BIRD LIFE AND SONG.

Seasonal changes—The Blackbird—Rooks—The Nightingale—The Owl—Habits and Haunts—Bird characteristics—Migration of birds—Songs of birds—Imitation of birds' song.

Away from the din of town birds are so much associated with our everyday life that it is only natural they should play an important part in poetry. In all ages poets have introduced them into their works, although more often than not the references have been of a kind that have not exhibited great knowledge about them.

Tennyson must have been a great lover of birds, for the intimate knowledge of their ways and habits displayed could only have been the outcome of long continued and keen observation.

SEASONAL CHANGES

In the spring the plumage of many birds is of more brilliant colouring than at other times of the

year, and this is indicated in the following quotation :—

In the Spring a fuller crimson comes upon the robin's breast ;

In the Spring the wanton lapwing gets himself another crest ;

In the Spring a livelier iris changes on the burnish'd dove ;
Locksley Hall, p. 98.

The linnet's bosom blushes at her gaze.

Progress of Spring, p. 866.

The more brilliant colouring in spring is not always due to the new feathers ; for with many birds, for instance the chaffinch which moults just after the nesting season, the brilliancy of the spring plumage is due curiously enough to the *wearing away* of the fringes of the feathers of the winter plumage, so as to mass together the underlying colours. For example, the feathers of the frontal base of the chaffinch which in spring are deep black are in the newly moulted plumage of autumn *basally* black but *tipped* with grey (a reddish grey) so that the band is indistinct and speckled, while in spring it is completely black and conspicuous because the tips of the feathers have weathered off. The uniform richer blue of the hind neck in spring is due to the same cause ; so also is the linnet's blushing bosom.—*H. O. F.*

Similarly in the winter the plumage of certain birds is paler, the effect of new feathers. The following passage shows us how important it is that the change should not occur too early in the season :—

The ptarmigan that whitens ere his hour,
Woos his own end ;
The Last Tournament, p. 454.

Birds are generally silent during moulting which follows the breeding season :—

The bird that moults sings the same song again.
Becket, p. 709.

THE BLACKBIRD

The poem to the Blackbird shows more than anything the wonderful sympathy that existed between the poet and birds. We see how much he loved its song in the early months of the year, and how on this account he refrained later on in the season from shooting the blackbirds as his neighbours did, and from netting his fruit trees.

O Blackbird ! sing me something well :
While all the neighbours shoot thee round,
I keep smooth plats of fruitful ground,
Where thou may'st warble, eat and dwell.

The espaliers and the standards all
Are thine ; the range of lawn and park :
The unnetted black-hearts ripen dark,
All thine, against the garden wall.

The Blackbird, p. 61.

The poem then goes on to relate the apparent ingratitude following on all this forethought :—

Yet, tho' I spared thee all the spring,
Thy sole delight is, sitting still,
With that gold dagger of thy bill
To fret the summer jenneting.

A golden bill ! The silver tongue
Cold February loved, is dry,
Plenty corrupts the melody
That made thee famous once, when young :

And in the sultry garden-squares
Now thy flute-notes are changed to coarse,
I hear thee not at all, or hoarse
As when a hawker hawks his wares.

The Blackbird, p. 61.

The whole poem is an account of a blackbird's life, and of the changes that occur in its song in different months of the year.

ROOKS

Tennyson refers to rooks in many instances.

Brawling or like a clamour of the rooks
At distance, ere they settle for the night.

The Marriage of Geraint, p. 344.

The following all show very careful observation of their ways :—

and oft, as dawn
Aroused the black republic on his elms,
Aylmer's Field, p. 150.

As the many-winter'd crow that leads the
clanging rookery home.
Locksley Hall, p. 99.
Vol. II., p. 48.

And Autumn, with a noise of rooks,
That gather in the waning woods,
In Memoriam, p. 269.

A shout rose again, and made
The long line of the approaching rookery swerve
From the elms.
The Princess, p. 217.

The rooks are blown about the skies ;
In Memoriam, p. 251.

THE NIGHTINGALE

The following alludes to the coming of this bird in the Spring and to its first song :—

And while he waited in the castle court,
 The voice of Enid, Yniol's daughter, rang
 Clear thro' the open casement of the hall,
 Singing ; and as the sweet voice of a bird,
 Heard by the lander in a lonely isle,
 Moves him to think what kind of bird it is
 That sings so delicately clear, and make
 Conjecture of the plumage and the form ;
 So the sweet voice of Enid moved Geraint ;
 And made him like a man abroad at morn
 When first the liquid note beloved of men
 Comes flying over many a windy wave
 To Britain, and in April suddenly
 Breaks from a coppice gemm'd with green and red,
 And he suspends his converse with a friend,
 Or it may be the labour of his hands,
 To think or say, ' There is the nightingale ' ;
 So fared it with Geraint, who thought and said,
 ' Here, by God's grace, is the one voice for me.'

The Marriage of Geraint, p. 346.

The note afterwards changes.

The nightingale, full-toned in middle May,
 Hath ever and anon a note so thin
 It seems another voice in other groves ;

Balin and Balan, p. 372.

But my voice is harsh here, not in tune, a
 Nightingale out of season.

Becket, p. 697.

Here is a reference to its " plain " eggs :—

Lay hidden as the music of the moon
 Sleeps in the plain eggs of the nightingale.

Aylmer's Field, p. 144.

The expression "plain" refers to the uniform colour of this bird's eggs. They are usually olive-brown (*British Birds in their Haunts*, by Rev. C. A. Johns, p. 19).

The migration of the nightingale is thus referred to :—

They are but of spring
They fly the winter change—

Harold, p. 676.

The bulbul is often confused with the nightingale, and it is frequently stated that it is the Persian name for that bird, or a species of it which has been much written of in English Poetry by Moore, Byron and others.

The bulbul, ornithologically known as *Pycnonotus jocosus*, does not belong to the same genus as our own nightingale. In Persia there is a true nightingale, often referred to as the Persian nightingale, of the same genus (*Daulias*) as our own, and belonging to the Thrush family. It is also a celebrated songster, and is one of the chief cage birds of Persia and Afghanistan. Its scientific name is *Daulias golzi*.—*H. O. F.*

The living airs of middle night
Died round the bulbul as he sung.

Recollections of the Arabian Nights, p. 10.
Vol. I., p. 45.

THE OWL

This bird is nocturnal in habits, though some
species are not entirely so.

And thrice as blind as any noonday owl.

The Holy Grail, p. 432.

Alone and warming his five wits,
The white owl in the belfry sits.

The Owl, p. 9.

For these are the new dark ages, you see, of the popular
press,

When the bat comes out of his cave, and the owls are
whooping, at noon,

Despair, p. 547.

When alluding to the note of the owl, Tennyson
makes use of expressions to be found in Shake-
speare in the last Act of *Love's Labour Lost*.

Thy tuwhits are lulled, I wot,
Thy tuwhoos of yesternight,

.

With a lengthen'd loud halloo,
 Tuwhoo, tuwhit, tuwhit, tuwhoo-o-o.

Second Song. To the same, p. 9.
Vol. I., p. 42.

Shrilly the owlet halloos ;

Leonine Elegiacs, p. 3.

HABITS AND HAUNTS

The next group of quotations are similes and deal with the habits, haunts, and everyday occurrences of various kinds of bird-life.

The robin watching anxiously for worms as the gardener turns over the earth :—

As careful robins eye the delver's toil,
The Marriage of Geraint, pp. 352 and 361.

Birds quarrelling over the same stalk of seed :—

as the thistle shakes
 When three gray linnets wrangle for the seed :
Guinevere, p. 460.

A hen calling in vain to her family, the ducklings she has reared, on seeing them swim away from her :—

but vainlier than a hen
 To her false daughters in the pool ;
The Princess, p. 200.

Our mind is carried away to a summer in the country by the following illustration of doves basking in the sun :—

like morning doves
That sun their milky bosoms on the thatch,
The Princess, p. 174.

And again :—

Said Ida ; 'home ! to horse !' and fled as flies
A troop of snowy doves athwart the dusk
When some one batters at the dovecote-doors,
Disorderly the women.
The Princess, p. 188.

Tennyson would not have us think the parrot a spiteful bird :—

and as a parrot turns
Up thro' gilt wires, a crafty loving eye,
And takes a lady's finger with all care,
And bites it for true heart and not for harm,
So he with Lilia's.
The Princess, p. 168.

The lark as an early riser is well-known :—

The lark first takes the sunlight on his wing,
The Cup, p. 758.

Each morn my sleep was broken thro'
By some wild skylark's matin song.
The Miller's Daughter, p. 37.
Vol. I., p. 147.

Birds of Paradise are also mentioned.

Like long-tailed birds of Paradise

That float thro' Heaven, and cannot light?

The Day-Dream, p. 108.

The reference, in the passage quoted above, is undoubtedly, I venture to think, to the fable current about the earliest Birds of Paradise brought (about 1510-20) to Europe. The skins invariably lacked legs and feet, having been removed by the natives when they skinned the birds, and it was only long after that any European saw a living specimen. It was said or believed that they were a race of limbless birds. The scientific name consequently given to one of the species, which it retains to-day, was *Paradisea apoda*, or Footless Bird of Paradise. Though some species have long tails, the majority have not. Those first known to Europeans were not of the long-tailed sorts. The long plumes, for which these birds are so ruthlessly slaughtered, arise in the region of the shoulders and back. Nearly all species of Birds of Paradise prefer to roost on the highest forest trees inland from the coast. I doubt whether it is right to say that the long-tailed kinds do not come to the ground; I have not seen them actually on the ground, but I have seen them a little above it, as if they had just risen from it. Many species "show off on

the ground. Milton refers to the same superstition :—

dost soar aloft
With plumes so strong, so equal, and so soft
The bird named from the Paradise you sing
So never flags, but always keeps on wing.

H. O. F.

Another tropical bird mentioned :—

The slender coco's drooping crown of plumes,
Enoch Arden, p. 133.

In connection with this bird, the following extract from "The Wonders of Nature and Art," p. 273, gives some idea of its general appearance.

"Another bird of Brazil is called the cocoï, which is shaped much like our storks, and has a most curious variety of colours on its feathers."

Tennyson had evidently watched the habits and disposition of the heron or hern with interest :—

Nigh upon that hour
When the lone hern forgets his melancholy,
Lets down his other leg, and stretching, dreams
Of good supper in the distant pool.

Gareth and Lynette, p. 337.

Gray swamps and pools waste places of the hern,
Geraint and Enid, p. 354.

The following three quotations show the usual position and character of martins' nests :—

Roof-haunting martins warm their eggs :

The Day-Dream, p. 105.

almost to the martin-haunted eaves,

Aylmer's Field, p. 145.

and then go forth and pass
Down to the little thorp that lies so close,
And almost plaster'd like a martin's nest
To these old walls—

The Holy Grail, p. 427.

The swallow and swift.

The swallow and the swift are near akin,
But thou art closer to this noble prince,

The Coming of Arthur, p. 314.
Vol. V., p. 25.

The swallow and the swift, though possessing a general similarity to each other, are now considered by ornithologists not to be at all nearly related. The swallow is a passerine bird; the swift is not. They differ greatly in their bony structure. Their nesting habits differ also: the swallow makes its nest of puddled clay, but the swift catches all sorts of scraps in the air and, with a little mud from rock crevices, glues the

whole together with saliva, to form its nest, which is built inside a church-tower or some such place. The swallow as a rule builds in an outhouse, byre, stable, &c., and in this particular differs from the house-martin.

Tennyson only followed the general opinion of ornithologists of an older date in asserting the near akin-ness of the two birds.—*H. O. F.*

The cuckoo is a disturber of domestic peace in bird-life.

I have seen the cuckoo chased by lesser fowl
And reason in the chase :

The Coming of Arthur, p. 311.

The cuckoo of a joyless June
Is calling out of doors :

Prefatory Poem to my Brother's Sonnets, p. 574.

The following extract in connection with this bird from Lewis Bonhote's book, "Birds of Britain," p. 187, is of interest :—

"This bird solves housekeeping difficulties in the simplest way by leaving its eggs to the tender mercies of other species. It apparently usually watches other birds when building, and as soon as the chosen nest contains a few eggs, it lays its own egg on the ground, and picking it up in its beak deposits it in the nest, throwing out at the same time a few of the rightful eggs. The eggs are, as a rule, deposited one by one

in a different nest of the same species, and when two Cuckoo's eggs are found in the same nest, they are almost assuredly the produce of two different birds."

This placing of eggs in other birds' nests is alluded to in the next quotation.

I built the nest, she said,
To hatch the cuckoo.

The Princess, p. 191.

BIRD CHARACTERISTICS

Nor quarry trenched along the hill
And haunted by the *wrangling* daw ;

In Memoriam, p. 275.

Not while the swallow *skims* along the ground,
And while the lark flies up and touches heaven !

The Foresters, p. 811.

Until she let me fly discased to sweep
In ever-highering *eagle-circles* up
To the great Sun of Glory,

Gareth and Lynette, p. 318.

Vol. III., p. 38.

Or underneath the barren bush
Flits by the sea-blue bird of March ;

In Memoriam, p. 272.

E. E., Vol. III., p. 250.

This refers to the kingfisher.

for about as long
 As the wind-hover *hangs* in balance,
Aylmer's Field, p. 147.

The wind-hover is more often known as the kestrel.

It is characteristic of birds to be subdued and quiet when a bird of prey is hovering round.

And all talk died, as in a grove all song
 Beneath the shadow of some bird of prey ;
Pelleas and Ettarre, p. 443.
 Vol. III., p. 317.

Sometimes the sparrowhawk, wheel'd along,
 Hush'd all the groves from fear of wrong :
Sir Launcelot and Queen Guinevere, p. 118.

MIGRATION OF BIRDS

The references to migration are numerous. Here are two dealing with it in a general way :—

Where now the seamew pipes, or dives
 In yonder greening gleam, and fly
 The happy birds, that change their sky
 To build and brood ; that live their lives
 From land to land ;
In Memoriam, p. 280.
 Vol. V., p. 176.

Like birds of passage piping up and down
 That gape for flies—
The Holy Grail, p. 421.

Here we learn their destination :—

The birds of passage flying south,
The Princess, p. 183.

Are chirping to each other of their flight
To summer lands !
The Ring, p. 852.

Why, nature's licensed vagabond, the swallow,
That might live always in the sun's warm heart,
Stays longer here in our poor north than you :—
Knows where he nested—ever comes again.
Queen Mary, p. 636.

If a migratory bird is imprisoned and prevented from leaving the country at the proper time, it will seize the first opportunity of freeing itself and then follow on :—

Bar the bird
From following the fled summer—a chink—he's out,
Gone !
Becket, p. 702.

Tennyson fully realised that birds migrate also in the night, or at any rate continue their flight after dark ; the next two quotations show this :—

Faint as a climate-changing bird that flies
All night across the darkness, and at dawn
Falls on the threshold of her native land,
And can no more,
Demeter and Persephone, p. 844.

Like wild birds that change
 Their season in the night and wail their way
 From cloud to cloud.

The Passing of Arthur, p. 467.

“Climate-changing” is a happy expression, as the migratory fever comes to a climax whenever a cold snap occurs in autumn, whole armies starting off in a night.—*H. O. F.*

Migrating birds are attracted by light in the same way as moths, and many get killed by flying against light-houses and light-ships:—

As the beacon-blaze allures
 The bird of passage, till he madly strikes
 Against it, and beats out his weary life.

Enoch Arden, p. 136.

Fixt like a beacon-tower above the waves
 Of tempest, when the crimson-rolling eye
 Glares ruin, and the wild birds on the light
 Dash themselves dead.

The Princess, p. 193.

SONGS OF BIRDS

The references to the songs of birds show what a wonderful capacity Tennyson had for selecting words which suggest the sound of their note, doing so in such a manner that we cannot fail to recognise it,

and, indeed, in our imagination almost hear it. In some instances the poet has even tried to imitate the bird.

Before proceeding we will quote a passage in which birds' song is alluded to as their "sun-worship."

What knowest thou of birds, lark, mavis, merle,
Linnæ? What dream ye when they utter forth
May-music growing with the growing light,
Their sweet sun-worship?

Gareth and Lynette, p. 335.
Vol. III., p. 79.

Then, dealing first with the wood-pigeon, we get the following representation of its soft, soothing note :—

And oft I heard the tender dove
In firry woodlands making moan ;
The Miller's Daughter, p. 37.

The moan of doves in immemorial elms,
The Princess, p. 213.

Deeply the wood-dove coos ;
Leonine Elegiacs, p. 3.

The word "piping" is used more than once by the poet in relation to different birds :—

And pipe but as the linnets sing,

In Memoriam, p. 253.

Sometimes the linnet piped his song :

Sometimes the throstle whistled strong.

Sir Launcelot and Queen Guinevere, p. 118.

On the nigh-naked tree the robin piped
Disconsolate.

Enoch Arden, p. 135.

And rarely pipes the mounted thrush ;

In Memoriam, p. 272.

“Laughter” is applied to the note of the wood-
pecker.

The laughters of the woodpecker
From the bosom of the hill.

Kate, p. 24.

An echo like a ghostly woodpecker,
Hid in the ruins ;

The Princess, p. 168.

—vows—I am woodman of the woods,
And hear the garnet-headed yaffingale
Mock them :

The Last Tournament, p. 455.

Yaffingale is another name for woodpecker.

The word "clamour" is applied to daws :—

And all the windy clamour of the daws
About her hollow turret.

Geraint and Enid, p. 358.
Vol. III., p. 136.

Other references to various birds are:—

Then would he whistle rapid as any lark,
Gareth and Lynette, p. 325.
Vol. III., p. 56.

Till the great plover's human whistle,
Geraint and Enid, p. 354.

let the wild
Lean-headed Eagles yelp alone,
The Princess, p. 213.
Vol. IV., p. 143.

but heard
The myriad shriek of wheeling ocean-fowl
Enoch Arden, p. 134.
Vol. V., p. 31.

The blackcap warbles, and the turtle purrs,
The starling claps his tiny castanets.
The Progress of Spring, p. 866.

"Claps his tiny castanets" refers to the snapping together of its mandibles, a constant habit of the starling.—*H. O. F.*

Nor hoary knoll of ash and haw
That hears the latest linnets trill.

In Memoriam, p. 275.

and the women sang
Between the rougher voices of the men,
Like linnets in the pauses of the wind :

The Princess, p. 169.

The very sudden and unmusical sounds of the jay
seem aptly described as scritchings :—

And thro' damp holts new-flush'd with may,
Ring sudden scritchings of the jay,

Kate, 11. p. 25.

[The expression was used by Jonson.

the scritchings owl
And buzzing hornet.

H. O. F.]

Perhaps the word is an outcome of the name
“screech-owl.”

Still other unmusical notes of birds are given :—

The parrot scream'd, the peacock squall'd

The Day-Dream, p. 106

Vol. II. p. 73.

marsh-divers, rather, maid,
Shall croak thee sister, or the meadow-crake
Grate her harsh kindred in the grass :

The Princess, p. 188.

The cry of the partridge would seem almost impossible to illustrate, but Tennyson has attempted it.

Cries of the partridge like a rusty key
Turned in a lock.

The Lover's Tale, p. 491.

Tennyson refers to the humming of dropping snipe :—

and greens
The swamp, where humm'd the dropping snipe,
With moss and braided marish-pipe ;

On a Mourner, p. 63.

The drumming or bleating of the snipe is produced not by the voice, but by the air rushing through its tail feathers, which are, during the operation, fully spread with the two outermost ones at right angles to the axial line of the bird's body. It is the vibration, of this pair of feathers especially, which produces the drumming, and only during the "dropping" or descending of the bird. The tone of each bird's humming varies with the subtle variations in the contour of these tail-feathers.—*H. O. F.*

Here are references to the crowing of the cock :—

Which was the red cock shouting to the light,
As the gray dawn stole o'er the dewy world,

Geraint and Enid, p. 360.

Waking she heard the night-fowl crow :
The cock sung out an hour ere light :

Mariana, p. 7.

The cock crew loud ; as at that time of year
The lusty bird takes every hour for dawn :

Morte d'Arthur, p. 72.

In the following the poet must certainly have had the cock in mind. Though crowing can hardly be considered singing, it is nevertheless the cock's form of song :—

And singing clearer than the crested bird
That claps his wings at dawn.

A Dream of Fair Women, p. 59.

The swan is known to utter a hissing sound when alarmed or angry.

Such a sound (For Arthur's knights
Were hated strangers in the hall) as makes
The white swan-mother, sitting, when she hears
A strange knee rustle thro' her secret reeds,
Made Garlon, hissing ;

Balin and Balan, p. 375.

There is a well-known legend that swans utter a "song" just before death.

like some full-breasted swan
That, fluting a wild carol ere her death,
Ruffles her pure cold plume, and takes the flood
With swarthy webs.

Morte d'Arthur, p. 72.

The Passing of Arthur, p. 474.

The wild swan's death-hymn took the soul
Of that waste place with joy.

The Dying Swan, p. 16.

Vol. I. p. 70.

The swan of our ornamental waters is designated the mute swan, since in domestication it is, as a rule, silent. In its wild state it is said to have a note like the other wild species—the whistling swan and Berwick's swan—whose “trumpet” calls are musical and constantly uttered during the flight of these birds.—*H. O. F.*

Owners of a caged bird may often have been wearied in the following way :—

Then as a little helpless innocent bird
That has but one plain passage of few notes,
Will sing the same simple passage o'er and o'er
For all an April morning, till the ear
Wearies to hear it, so the simple maid
Went half the night repeating, ‘Must I die?’

Lancelot and Elaine, p. 410.

Vol. III. p. 236.

Birds generally sing quite close to their nests :—

Hark, by the bird's song ye may learn the nest,
The Marriage of Geraint, p. 346.

And the lark often sings above its nest, soaring
so high as to become invisible.

And drown'd in yonder living blue
The lark becomes a sightless song.
In Memoriam, p. 280.

Like tender things that being caught feign death.
Princess, p. 197.

The chick of the bearded vulture, when come
upon in its nest, even a few hours after emerging
from the egg, will instantly simulate death, assum-
ing a distorted body with closed eyes, and lie
motionless for a long time.—*H. O. F.*

The variety of birds' notes Tennyson alludes to
has been shown to be very striking ; his ears
must have been always open to receive
fresh sounds ; it is, moreover, often no easy matter
to discover the hidden songster. Before concluding
this part on birds' notes one more quotation must
be given.

From the woods
 Came voices of the well-contented doves.
 The lark could scarce get out his notes for joy,
 But shook his song together as he near'd
 His happy home, the ground. To left and right,
 The cuckoo told his name to all the hills ;
 The mellow ouzel fluted in the elm ;
 The red cap whistled ; and the nightingale
 Sang loud, as tho' he were the bird of day.

The Gardener's Daughter, p. 74.

IMITATION OF BIRDS' SONG

With regard to the verbal reproducing of birds' notes Tennyson has attempted this in the case of the thrush, or throistle, and the rook.

THE THROSTLE

"Summer is coming, summer is coming.
 I know it, I know it, I know it.
 Light again, leaf again, life again, love again,"
 Yes, my wild little Poet.

Sing the new year in under the blue.
 Last year you sang it as gladly.
 "New, new, new, new !" Is it then *so* new
 That you should carol so madly ?

"Love again, song again, nest again, young again,"
 Never a prophet so crazy !
 And hardly a daisy as yet, little friend,
 See, there is hardly a daisy.

Here again, here, here, here, happy year !
O warble unchidden, unbidden !
Summer is coming, is coming, my dear,
And all the winters are hidden.

The Throstle, p. 874.

The "new, new, new, new," in the second verse is a perfect reproduction, and later on the "Here again, here, here, here," is a further attempt to imitate another note.

In a passage of *Maud* the rook's note has been introduced.

Birds in the high Hall garden
When twilight was falling
Maud, Maud, Maud, Maud,
They were crying and calling.

Maud, p. 294.

According to Mr. Mackie (*Nature Knowledge*, p. 35) there has been a good deal of discussion as to whether rooks were meant here, but *he* does not seem to doubt it and says, "Indeed we have it on the authority of Mr. Andrew Lang (*Tennyson*, p. 93) that the poet himself declared for rooks."

SECTION XII

THE INSECT WORLD

Effects of heat and cold—The Metamorphoses of Insects—
Moths—Bees—Flies—Dragon-Flies—Spiders—Insect
noises.

THERE are many passages on various forms of insect life, and all indicate with what care the varied problems of metamorphism had been studied, and how keen an observation had been brought to bear upon them.

EFFECTS OF HEAT AND COLD

We may begin with the following general pictures of noonday- and winter-life among insects :

For now the noonday quiet holds the hill :
The grasshopper is silent in the grass :
The lizard, with his shadow on the stone,
Rests like a shadow, and the winds are dead.
The purple flower droops : the golden bee
Is lily-cradled :

Oenone, p. 40.

Bite, frost, bite,
You roll up away from the light
The blue wood-louse, and the plump dormouse,
And the bees are stilled, and the flies are killed.

The Window, p. 245.

THE METAMORPHOSES OF INSECTS

An insect goes through many changes of form, and not all insects go through the same phases. All insects lay eggs, but from the eggs of flies, bees, beetles and the like we get a worm or maggot or grub, while from moths, butterflies and the like we get a caterpillar.

Those forms of life which are hatched from the egg are termed *larvæ*, and have to pass through a chrysalis or pupal stage before becoming like their parents. The pupa is usually covered by a silken cocoon which, according to Carpenter (*Insects: their Structure and Life*, p. 119), "is spun by the larva as its last act before passing into the pupal state." Such insects as these are said to go through a *complete metamorphosis*.

[Insects with *incomplete metamorphosis* moult several times, but do not pass through a quiescent stage before assuming the adult age. The term *nymph* is used chiefly for the stage of insects with imperfect metamorphoses in which rudi-

mentary wings are present, as contrasted with the *larvæ* in which they are absent.—*W. F. K.*]

The following quotations show how familiar all these transformations were to the poet:—

For every worm beneath the moon
Draws different threads, and late and soon
Spins, toiling out his own cocoon.

The Two Voices, p. 33.
Vol. I., p. 130.

“O worms and maggots of to-day
Without their hope of wings!”

The Ancient Sage, p. 551.

This dull chrysalis
Cracks into shining wings.

St. Simeon Stylites, p. 87.

Where, like a butterfly in a chrysalis,
You spent your life;

Queen Mary, p. 585.

MOTHS

Tennyson only mentions one species of Moth, the Emperor moth, which doubtless derived its name from the richness of its appearance:—

I think they should not wear our rusty gowns,
But move as rich as Emperor-moths.

The Princess, p. 167.

Here is another allusion to the "richness" of the moth's appearance :—

And we as rich as moths from dusk cocoons.

The Princess, p. 173.

And wheel'd or lit the filmy shapes
That haunt the dusk, with ermine capes
And woolly breasts and beaded eyes.

In Memoriam, p. 273.

E. E., Vol. III., p. 251.

A reference perhaps to the ermine or the puss-moth.

Although some moths do not come out during the daytime, their habit of approaching artificial light is well known :—

The moth will singe her wings, and singed return,
Her love of light quenching her fear of pain.

Sir John Oldcastle, Lord Cobham, p. 524.

. . . Why

Make it so hard to save a moth from the fire?

Becket, p. 702.

When I was at Toronto, I heard that the electric lights appeared to have almost exterminated certain species of moths that were formerly common.

W. F. K.

BEES

We next come to bees and the passages are so numerous that they form quite a history of their every-day life.

Here is an allusion to the instinct of the bee to find its way home :—

and less from Indian craft
Than bee-like instinct hiveward, found at length
The garden portals.

The Princess, p. 189.

This instinct, well marked amongst some animals, is much developed in the case of the bee, for which of course it is most important. This homing instinct of bees was carefully studied by Romanes.

Bees get covered with pollen when taking the honey from certain flowers :—

Him, like the working-bee in blossom-dust
Blanch'd with his mill, they found ;

Enoch Arden, p. 130.

The taking of honey by the bee doubtless tarnishes the flower to some extent, although the reproduction, of certain flowers at all events, depends on their pollen being carried from one to the other by the bees, and this is done in the process of the bees taking the honey.

But you, cousin, are fresh and sweet
As the first flower no bee has ever tried.

Queen Mary, p. 585.

Here is a reference to the making of cells :—

Not less the bee would range her cells,

The Two Voices, p. 31.

With regard to swarming we have the following :—

Sweet thoughts would swarm as bees about their queen.

The Princess, p. 169.

With the hum of swarming bees
Into dreamful slumber lull'd.

Eleänore, p. 23.

It may be of interest to give this extract on swarming from Carpenter's book, "Insects, their Structure and Life," p. 335.

When a young queen emerges from her cell she is killed by the workers or allowed to fight to the death with her mother unless the hive is overcrowded, in which case, the old queen, being prevented by the workers from attacking her daughter, leads off part of the population to found a new community.

A very fine description of the flight of the swarm is given in Maeterlinck's well-known book, "The Life of the Bee." (Division 37.)

Those who have kept bees are well acquainted with the custom of beating some metal pan in order to direct the attention of swarming bees towards the new hive prepared for them :—

Swarm to thy voice like bees to the brass pan.

The Foresters, p. 813.

Bees as defenders of the hive are depicted here :—

Cram me not, thou, with honey, when our good hive
Needs every sting to save it.

Harold, p. 677.

I watched a hive of late ;
My seven-years' friend was with me, my young boy ;
Out crept a wasp, with half the swarm behind.
" Philip ! " says he. I had to cuff the rogue
For infant treason.

Third Member. But they say that bees,
If any creeping life invade their hive
Too gross to be thrust out, will build him round,
And bind him in from harming of their combs.
And Philip by these articles is bound
From stirring hand or foot to wrong the realm.
Second Member. By bonds of beeswax, like your
creeping thing ;
But your wise bees had stung him first to death.

Queen Mary, p. 612.

Sometimes slugs and snails will creep into a hive which the bees, with all their address, cannot readily expel or carry out. But here their instinct is at no loss for they kill them and afterwards embalm them with propolis, which is the substance they use for lining their hives, so as to prevent any offensive odours from incommoding them. An unhappy snail, that had travelled up the sides of a glazed hive, and which the bees could not come at with their stings, they fixed, a monument of their vengeance and dexterity, by laying this substance all around the mouth of its shell.

Extract from Kirby and Spence's *Introduction to Entomology*, Letter 20, p. 394.

W. F. K.

The bee's sting is barbed, and is generally left behind in the action of stinging; the bee then dies in consequence and for this reason only uses this weapon in the direst need:—

Nor thou be rageful, like a handled bee,
And lose thy life by usage of thy sting;

The Ancient Sage, p. 551.

[In the case of fighting queens, the sting is straighter, and can be withdrawn when the defeated queen is killed.—W. F. K.]

Tennyson has alluded to the humming of bees in several instances:—

And murmuring of innumerable bees.

The Princess, p. 213.

At noon the wild bee hummeth
About the moss'd headstone:

Claribel, p. 2.

Chaunteth not the brooding bee
Sweeter tones than calumny?

What but a murmur of gnats in the gloom, or a moment's anger of bees in their hive?

Vastness, p. 851.

Or the yellow-banded bees.

Eleanore, p. 23.

"Yellow-banded bees" is specially applicable to several common species of *Bombi* (humble bees).

W. F. K.

FLIES

With regard to flies Tennyson more than once uses the expression "summer-flies."

For though my men and I flash out at times
Of festival like burnished summer-flies,
We make but one hour's buzz.

The Foresters, p. 811.

But since you name yourself the summer fly,
I well could wish a cobweb for the gnat,
That settles, beaten back, and beaten back
Settles, till one could yield for weariness ;

Merlin and Vivien, p. 386.

A gilded summer-fly
Caught in a great old tyrant spider's web,
Who meant to eat her up in that wild wood.

Merlin and Vivien, p. 384.

It is difficult to know which species he is alluding to, but the *Calliphora vomitoria*, or Blow-fly, commonly known as the Blue-bottle fly, as well as the Green-bottle fly (*Lucilia Cæsar*) have all a much brighter and more burnished appearance than the ordinary house-fly. Per-

haps the latter was in Tennyson's mind. It is a brilliant green fly, which often settles on hedges ; "gilded " would hardly apply to a gnat.

W. F. K.

Some flies are hatched late in the season :—

the flies of latter spring,
That lay their eggs, and sting and sing
And weave their petty cells and die.

In Memoriam, p. 260.

The stinging fly, *Stomoxys calcitrans*, which much resembles the common house-fly, appears later in the summer, and comes into houses in damp weather.—*W. F. K.*

Flies have a great liking for sweet things and often fall victims to their greed :—

Nor drown thyself with flies in honied wine ;

The Ancient Sage, p. 551.

That gnats frequent rivers and damp places is well known :—

Over the pools in the burn water-gnats murmur and mourn.

Leonine Elegiacs, p. 3.

We also have a reference to the spittle-insects,

Sweeping the frothfly from the fescue, brush'd
Thro' the dim meadow toward his treasure-trove,

Aylmer's Field, p. 150.

Fescue is a kind of grass.

These insects belong to the family of the Cercopidæ which are also called frog-hoppers. In connection with these it is of interest to quote the following from Comstock's "Manual for the Study of Insects," p. 152.

"During the summer months one often finds upon various shrubs and herbs masses of white froth. In the midst of each of these masses there lives a young insect, a member of this family. In some cases as many as four or five insects inhabit the same mass of foam. The froth is supposed to consist of sap, which the insect has pumped from the plant by means of its beak, and passed through its alimentary canal. It is asserted that these insects undergo all their transformations within this mass; . . . they have the power of leaping well. The name frog-hoppers has doubtless grown out of the fact that formerly the froth was called 'frog-spittle,' and was supposed to have been voided by tree-frogs from their mouths."

Another passage illustrates the fact that certain insects with dull wing-cases have brilliant bodies.

Whereat Sir Gareth loosed
A cloak that dropt from collar-bone to heel,
A cloth of roughest web, and cast it down,
And from it like a fuel-smother'd fire
That lookt half-dead, break bright, and flash'd as those
Dull-coated things, that making slide apart
Their dusk wing cases, all beneath there burns
A jewell'd harness, ere they pass and fly.
So Gareth ere he parted flash'd in arms.

Gareth and Lynette, p. 328.

I find that there are several species of Buprestidæ, and probably other beetles to which this passage might apply.—*W. F. K.*

DRAGON-FLIES

These insects belong to the order which go through *an incomplete metamorphosis*, that is to say after leaving the egg, they do not change their form entirely before becoming fully developed, they do not go through a quiescent pupal stage. The larva and nymph of the dragon-fly are provided with very strong legs and jaws, and spend most of their time swimming about catching and devouring smaller insects.

This first quotation is a fine *résumé* of what happens at the different stages of the dragon-fly's existence :—

To which the voice did urge reply ;
To-day I saw the dragon-fly
Come from the wells where he did lie.

‘An inner impulse rent the veil
Of his old husk : from head to tail
Came out clear plates of sapphire mail.

‘He dried his wings : like gauze they grew :
Thro’ crofts and pastures wet with dew
A living flash of light he flew.’

The Two Voices, p. 31.
Vol. I., p. 122.

Leland Howard writes of the nymph (The Insect Book, p. 368):—"It crawls out of the water on the bank upon the stems of water plants or upon the rocks, and later its skin splits down the back, and the adult dragon-fly emerges."

Dragon-flies have a very swift and strong flight, and as their wings of gauze have a glazed appearance, the flight seems very appropriately described by Tennyson as "a living flash of light." The term "plates of mail" no doubt refers to the divisions on the dragon-fly's body known as *segments*.

[Perhaps the species alluded to here is the *Æschna cyanea*, a large, common and beautifully-coloured insect.—*W. F. K.*]

Again we find Tennyson making mention of their quick flight and also their colouring:—

The dragon-fly
Shot by me like a flash of purple fire.
The Lover's Tale, p. 489.

With whom I sang about the morning hills,
Flung ball, flew kite, and raced the purple fly.
The Princess, p. 176.

The "Purple Fly" is apparently a Dragon fly, and perhaps Tennyson had in mind the male of

Libellula depressæ, a large and conspicuous dragon-fly, of rapid flight, with a broad blue abdomen, when fully coloured.—*W. F. K.*

And yet another reference is made to their gay appearance in a comparison to the holiday attire of Prince Geraint :—

A purple scarf, at either end whereof
There swung an apple of the purest gold,
Sway'd round about him, as he gallop'd up
To join them, glancing like a dragon-fly
In summer suit and silks of holiday.

The Marriage of Geraint, p. 343.

The great compound eyes of dragon-flies are sometimes described as resembling gold or precious stones (Comstock's "Manual for the Study of Insects," p. 91).

SPIDERS

The descent of spiders by means of their web:—

Like threaded spiders, one by one, we dropt,
And flying reach'd the frontier :

The Princess, p. 171.

Marian. Then I would drop from the casement,
Like a spider.

The Foresters, p. 807.

Gossamer or spiders' web is mentioned :—

All the silvery gossamers
That twinkle into green and gold.

In Memoriam, p. 250.

And dew-drops or rain-drops are depicted on the web here :—

Nor the cannon-bullet rust on a slothful shore,
And the cobweb woven across the cannon's throat
Shall shake its threaded tears in the wind no more.

Maud, p. 307.
Vol. IV., p. 248.

INSECT NOISES

The word *boometh* seems a most appropriate expression for the flight of a beetle :—

At eve the beetle boometh
Athwart the thicket lone :

Claribel, p. 2.

An' 'eerd 'um a bummin' awaäy loike a buzzard-clock¹
over my 'eäd.

Northern Farmer, Old Style, p. 229.
Vol. II., p. 267.

Philip's incessant chatter is referred to as :—

His weary day long chirping, like the dry
High-elbow'd grigs that leap in summer grass.

The Brook, p. 139.

¹ Cockchafer.

This expression "high-elbow'd" is a good description of the two long legs of the grigs or grasshoppers.

The cricket is also referred to :—

Not a cricket chirr'd :

In Memoriam, p. 273.

Vol. V., p. 148.

Than of the myriad cricket of the mead
When its own voice clings to each blade of grass
And every voice is nothing.

Lancelot and Elaine, p. 397.

And the cicala :—

At eve a dry cicala sung.

Mariana in the South, p. 30.

E. E., Vol. I., p. 339.

Although at its loudest at mid-day, the cicala continues its song well into the evening.

The Cicadidæ, to which the Cicala or Cicada belongs, are a large family of *Homoptera*, of which we have only one species in England, which is scarce, and almost confined to the New Forest.

W. F. K.

The tiny-trumpeting gnat can break our dream
When sweetest ; and the vermin voices here
May buzz so loud,—we scorn them, but they sting.

Lancelot and Elaine, p. 398.

Vol. III., p. 207.

SECTION XIII

ANIMALS AND THEIR WAYS

Snakes—Lizards—Dogs—The Horse—Other Animals.

SNAKES

Like birds the charming serpent draws,
To drop head-foremost in the jaws
Of vacant darkness and to cease.

In Memoriam, p. 256.

THIS well-known popular belief that snakes "fascinate" birds is erroneous. (See *Proc. Zool. Soc. of London*, 1907, p. 785. Chalmers Mitchell and Pocock, "On the Feeding of Snakes in Captivity, with Observations on the Fear of Snakes by other Vertebrates.")—*P. C. M.*

And snake-like slimed his victim ere he gorged.

Sea-Dreams, p. 159.

Snakes do not cover their prey with slime before swallowing it, but in the process of swallowing there is a certain amount of salivation: thus an

animal that is completely covered with slime is one that has been swallowed and then disgorged—a not infrequent occurrence. (See same reference as last note.)—*P. C. M.*

The moulting of snakes is also mentioned :—

The snake that sloughs comes out a snake again.

Becket, p. 709.

The scales of snakes, which are altogether without bone, consist of papillæ of the dermis and epidermis, and the outer part of them is formed of a cuticularised layer derived from the cornification of the outer layer of the epidermis. It is this horny cuticular layer which is shed : the deeper growing part of the epidermis is not shed.—*A. S.*

Here is a well-known fact illustrated in connection with the eggs of some species of snakes :—

And one, in whom all evil fancies clung
Like serpent eggs together, . . .

Enoch Arden, p. 132.

LIZARDS

The lizard, with his shadow on the stone,
Rests like a shadow.

Ænone, p. 40.

The next quotation is of special interest.

Two vipers of one breed—an amphisbæna,
Each end a sting : . . .

Queen Mary, p. 615.
E. E., Vol. VIII., p. 337.

Milton also refers to the amphisbæna in *Paradise Lost*, X., p. 524 :—

Scorpion and asp and amphisbæna dire.

The word Amphisbæna was applied by the Greeks to a mythical creature with a head at each end of its body. There can be no doubt that Milton, and Tennyson after him, referred to this mythical monster.

The Amphisbæna of our time belongs to a family of Lizards; there are also several other genera of limbless lizards which at first sight are not easy to distinguish from snakes, but the Amphisbæna is, perhaps, the most snake-like; it must, however, be noted that it has no sting, and is quite harmless.—A. S.

It may be of interest to quote the following from Gadow's book *Amphibia and Reptiles*, p. 566.

Amphisbæna, with nearly thirty species, in Tropical America and Africa. On account of the short rounded-off head and the almost equally blunt tail these creatures are called by the natives "cobras de dous cabezas," i.e. snakes

with two heads, or they are known as “maes das formigas,” *i.e.* mothers of ants, because of their predilection for taking up their quarters in the nests of ants or termites. The scientific name refers of course to their capability of moving forwards and backwards (*ἀμφίς*, at both ends, and *βαίω*, walk).

The slow-worm creeps, and the thin weasel there
Follows the mouse,

Aylmer's Field, p. 155.

The absence of limbs in lizards does not indicate in itself special affinity to snakes, but seems to be associated with some special habit of life, such as burrowing or living among stones and thick vegetation. The well-known “slow-worm” or “blind-worm” (*Anguis fragilis*) mentioned above is another and better known example of a limbless and in that respect snake-like lizard.—*A. S.*

DOGS

Dogs are alluded to frequently, and in such a way as to show how keenly Tennyson watched their ways and the incidents in their lives. He is fond of referring to them as “dreaming,” as demonstrated by the convulsive movements they often make with their paws when asleep :—

. . . that was mine, my dream, I
knew it—
Of and belonging to me, as the dog
With inward yelp and restless forefoot plies
His function of the woodland : . . .

Lucretius, p. 161.

Like a dog, he hunts in dreams.

Locksley Hall, p. 100.

Here is a picture of a dog in danger of losing his
bone :—

Each growling like a dog, when his good bone
Seems to be pluck'd at by the village boys,
Who love to vex him eating, and he fears
To lose his bone, and lays his foot upon it,
Gnawing and growling.

Geraint and Enid, p. 362.

And of a dog called away by his owner in the
middle of a fight :—

. . . as the cur,
Pluckt from the cur he fights with, ere his cause
Be cool'd by fighting, follows, being named,
His owner, but remembers all and growls
Remembering.

Gareth and Lynette, p. 329.

Also of a dog being held back from the rats he
sees :—

But in his heat and eagerness
Trembled and quivered, as the dog, withheld
A moment from the vermin that he sees
Before him, shivers, ere he springs and kills.

Pelleas and Ettarre, p. 437.

The following quotation is also worth giving; it alludes to the unsteady movement of puppies which is so characteristic :—

Then from the plaintive mother's teat he took
Her blind and shuddering puppies, naming each.

The Brook, p. 141.

THE HORSE

The horse is also dealt with :—

He laugh'd, and I, though sleepy, like a horse
That hears his corn bin open, prick'd my ears.

The Epic, prelude to Morte d' Arthur, p. 68.

For still we moved
Together, twinn'd as horse's ear and eye.

The Princess, Pt. I., p. 170.

Feeding like horses when you hear them feed.

Geraint and Enid, p. 363.

At which her palfrey whinnying lifted heel,
And scour'd into the coppices and was lost,
While the great charger stood, grieved like a man.

Geraint and Enid, p. 362.

Vol. III., p. 146.

OTHER ANIMALS

The following will show the variety of animals introduced by the poet.

Worms are known to draw down leaves into the earth (Darwin's book on *Earthworms*) and this is thus referred to :—

. . . as the worm draws in the wither'd leaf
And makes it earth, . . .

Geraint and Enid, p. 364.

E. E., Vol. V., p. 475.

Darwin's book on *Earthworms* was published in 1881; *Geraint and Enid* was published in 1859, and Tennyson had observed worms drawing in withered leaves on the lawn at Farringford before the poem was written.

Then dealing with the badger we have the following :—

Seeing I never strayed beyond the cell
But live like an old badger in his earth,
With earth about him everywhere.

The Holy Grail, p. 428.

The badger, which has some resemblance to a diminutive bear, is nocturnal in habits and thus seen very little; for retreat it makes a burrow with many outlets.

Bats hibernate :—

Were laid up like winter bats.

The Princess, p. 188.

This reference is only figurative, but it serves to illustrate the fact that bats hibernate, certain species doing so more completely than others, and during this time they are to be found clustered together in dark nooks of church towers or ruins, their wings enveloping them like a cloak as they hang, head downwards, suspended by their hooked hind legs.

[Among warm-blooded animals the phenomenon of hibernation is found in mammals only. Birds do not hibernate, but they often migrate to warmer climes in winter. In cold-blooded animals a suspension of the vital activities is common enough, and may occur in summer (æstivation) as well as in winter. Among mammals hibernation is doubtless due more to scarcity of food than to cold, and the same may be said of the migration of birds. During hibernation the temperature is lowered, the respiration is less active, the heart's beat is slowed, food is not taken, and the fat masses which were stored up in the autumn are consumed.—
A. S.]

The bat is known also by the name of flitter-mouse :—

Our voices were thinner and fainter than any flittermouse shriek.

The Voyage of Maeldune, p. 529.

The squirrel.

Even your woodland squirrel sees the nut
Behind the shell, and thee however mask'd
I should have known.

The Foresters, p. 820.

Elephants. Notice the reference to their trunks.

. . . and the brutes of mountain back
That carry kings in castles, bow'd black knees
Of homage, ringing with their serpent hands,
To make her smile, her golden ankle-bells.

Merlin and Vivien, p. 389.

Vol. III., p. 186.

The blue-eyed cat.

I will be deafer than the blue-eyed cat,

The Holy Grail, p. 432.

In the Eversley Edition (Vol. V., p. 497) we find the following note in connection with the above. *Note.* (Cf. Darwin's *Origin of Species*, ch. i.: "Thus cats which are entirely white and

154 ANIMALS AND THEIR WAYS

have blue eyes are generally deaf; but it has lately been pointed out by Mr. Tait that this is confined to the males."—Ed.)

Seals attracted by music :—

I cannot cease to follow you, as they say
The seal does music.

The Princess, p. 193.
Vol. IV., p. 84.

The hide of a hog is affected by good feeding :

. . . but an he work,
Like any pigeon will I cram his crop,
And sleeker shall he shine than any hog.

Gareth and Lynette, p. 325.
Vol. III., p. 55.

An interesting instinct prevalent amongst certain animals is alluded to in the following :—

Like tender things that being caught feign death,

The Princess, p. 197.

An example of this is given in the section on Birds on page 126, in a note by Dr. Forbes.

The word "twinkling" applied to movements of ear and tails :—

Then crost the common into Darnley chase
To show Sir Arthur's deer. In copse and fern
Twinkled the innumerable ear and tail.

The Brook, p. 141.

And a weasel hung up as warning to its kind is depicted here :—

Well then, Psyche, take my life,
And nail me like a weasel on a grange,
For warning :

The Princess, p. 179.

In conclusion we give the following which is very similar to quotations given in the sections on "Botany" and "Birds." It is quite a characteristic of Tennyson to give a series of facts in this way.

Then the great Hall was wholly broken down,
And the broad woodland parcell'd into farms ;
And where the two contrived their daughter's good,
Lies the hawk's cast, the mole has made his run,
The hedgehog underneath the plantain bores,
The rabbit fondles his own harmless face,
The slow-worm creeps, and the thin weasel there
Follows the mouse, and all is open field.

Aylmer's Field, p. 155.

The slow-worm has been referred to by Prof. Sedgwick on page 148.

SECTION XIV

PLANTS AND TREES

Seasonal changes : Spring, Seed time, The Fruit Season and Autumn, Winter.—Plants : Descriptions, Characteristics, Habitats.—Trees : Oak, Thorn, Chestnut, Ash, Yew, Elm, Various References.

WE can hardly do better, on commencing the passages relating to botany, than to give the verses entitled "The Flower." If these did not in the poet's mind refer to natural study on Darwinian lines they are so applicable to that theme as to afford a wonderful example of Tennyson's concern with natural processes.

Once in a golden hour
I cast to earth a seed.
Up there came a flower,
The people said, a weed.

To and fro they went
Thro' my garden-bower,
And muttering discontent
Cursed me and my flower.

Then it grew so tall
It wore a crown of light,
But thieves from o'er the wall
Stole the seed by night.
Sow'd it far and wide
By every town and tower,
Till all the people cried,
'Splendid is the flower.'
Read my little fable :
He that runs may read.
Most can raise the flowers now,
For all have got the seed.
And some are pretty enough,
And some are poor indeed ;
And now again the people
Call it but a weed.

The Flower, pp. 235—236.
E. E., Vol. II., 373.

SEASONAL CHANGES

We may begin our references to special passages with the allusions to the seasonal changes which occur in the vegetable kingdom.

SPRING

There are many references to the blossoming which takes place in Spring ; indeed, Spring as being the bringer of new life is a favourite theme of Tennyson's.

On such a time as goes before the leaf,
When all the wood stands in a mist of green
And nothing perfect.

The Brook, p. 139.

Like April sap to the topmost tree, that shoots
New buds to heaven.

The Foresters, p. 812.

The maiden Spring upon the plain
Came in a sun-lit fall of rain.
In crystal vapour everywhere
Blue isles of heaven laugh'd between,
And far, in forest-deeps unseen,
The topmost elm-tree gather'd green
From draughts of balmy air.

Sir Launcelot and Queen Guinevere

(A Fragment), p. 118.

Vol. II., p. 124.

The moving whisper of huge trees that branch'd
And blossom'd in the zenith.

Enoch Arden, p. 134.

Vol. V., p. 31.

The slender acacia would not shake
One long milk-bloom on the tree ;
The white lake-blossom fell into the lake
As the pimpernel dozed on the lea.

Maud, p. 301.

Vol. IV., p. 220.

Out I sprang from glow to gloom :
There whirl'd her white robe like a blossom'd branch
Rapt to the horrible fall.

The Princess, p. 188.

As clean and white as privet when it flowers.

Walking to the Mail, p. 82.

And in a college gown,
That clad her like an April daffodilly.

The Princess, p. 178.

And on the further side
Arose a silk pavilion, gay with gold
In streaks and rays, and all Lent-lily in hue,
Save that the dome was purple.

Gareth and Lynette, p. 332.

Southward they set their faces. The birds made
Melody on branch, and melody in mid air.
The damp hill-slopes were quickened into green,
And the live green had kindled into flowers,
For it was past the time of Easter-day.

Gareth and Lynette, p. 320.

Vol. III., p. 44.

A spring frost.

And I could have loved him too, if the blossom can
doat on the blight,
Or the young green leaf rejoice in the frost that sears
it at night.

The Wreck, p. 541.

The larch, the lime, the thorn-tree and many others are all introduced, and here it may be mentioned how fond Tennyson was of referring to buds and blossoms, and using them often as

a means of representing the Spring time of year.
For instance :—

When rosy plumelets tuft the larch.

In Memoriam, p. 272.

Referring to the young cones that are rosy-red
in colour.—*J. B. F.*

A million emeralds break from the ruby-budded lime.

Maud, p. 289.

SEED TIME

The poet alludes to the seeds of the dandelion
more than once, doing so as a means of identifying
the flower he is referring to :—

Filling with light
And vagrant melodies the winds which bore
Them earthward till they lit ;
Then, like the arrow seeds of the field-flower,
The fruitful wit
Cleaving, took root and springing forth anew
Where'er they fell, behold
Like to the mother-plant in semblance grew
A flower all gold.

The Poet, p. 14.

As if the flower,
That blows a globe of after arrowlets,
Ten thousand-fold had grown, flashed the fierce shield,
All sun.

Gareth and Lynette, p. 334.

THE FRUIT SEASON AND AUTUMN 161

Or from the tiny pitted target blew
What look'd a flight of fairy arrows aim'd
All at one mark, all hitting.

Aylmer's Field, p. 144.

Here are two other references to seeds :—

And finding that of fifty seeds,
She often brings but one to bear.

In Memoriam, p. 261.

Almost as neat and close as Nature packs
Her blossom and her seedling.

Enoch Arden, p. 127.

THE FRUIT SEASON AND AUTUMN

The kernel of the shrivelled fruit
Is jutting thro' the rind.

The Ancient Sage, p. 549.

This refers, we may take it, to the stone of a
"stone-fruit" within which the actual kernel or
seed is enclosed.—*D. P.*

He comes, a rough, bluff, simple-looking fellow,
If we may judge the kernel by the husk.

The Cup, p. 752.

In this instance the use of the word "husk"
indicates that the poet was thinking of the filbert.

Whether by "kernel" is meant the seed which is the kernel of the filbert, or whether the nut as a whole, nestling within the husk, be intended, is not clear. Whichever he intended, the aptitude of the allusion is unaffected.—*D. P.*

Here is the life-history of an apple :

Lo ! sweeten'd with the summer light,
The full-juiced apple, waxing over-mellow,
Drops in a silent autumn night.
All its allotted length of days,
The flower ripens in its place,
Ripens and fades, and falls, and hath no toil,
Fast-rooted in the fruitful soil.

Choric Song, p. 55.
Vol. I., p. 211.

The little flaw in fruit which eventually spreads
and affects the whole :—

Or little pitted speck in garner'd fruit,
That rotting inward slowly moulders all.

Merlin and Vivien, p. 386.

Autumn tints.

And Autumn laying here and there
A fiery finger on the leaves.

In Memoriam, p. 275.

THE FRUIT SEASON AND AUTUMN 163

These leaves that redden to the fall.

In Memoriam, p. 250.

Vol. V., p. 62.

The last red leaf is whirl'd away.

In Memoriam, p. 251.

Unloved, the beech will gather brown,
The maple burn itself away.

In Memoriam, p. 275.

With creepers crimsoning to the pinnacles,
As if perpetual sunset linger'd there.

The Ring, p. 852.

This refers clearly to *Parthenocissus tricuspidata*, more usually but incorrectly known as *Ampelopsis Veitchii*.—*D. P.*

Darkly that day rose :
Autumn's mock sunshine of the faded woods
Was all the life of it.

Aylmer's Field, p. 152.

E.E., Vol. II., p. 359.

In the Eversley Edition there is the following note on the above quotation "A day without sun, the only faint resemblance to sunshine being the bright yellow of the faded autumn leaves."

After the red colouring of the leaves comes their
"crumpling" :—

As a leaf in mid-November is
To what it was in mid-October.

The Marriage of Geraint, p. 350.

Enid felt her dress to be very worn and faded
after the arrival of Geraint.

A spirit haunts the year's last hours
Dwelling amid these yellowing bowers :
 To himself he talks ;
For at eventide, listening earnestly,
At his work you may hear him sob and sigh
 In the walks ;
Earthward he boweth the heavy stalks
Of the mouldering flowers :
 Heavily hangs the broad sunflower
 Over its grave i' the earth so chilly ;
 Heavily hangs the hollyhock,
 Heavily hangs the tiger-lily.

Song, p. 13.
Vol. I., p. 56.

WINTER

The first part of the poem "To Ulysses"
presents a vivid picture of English tree life in
winter.

To you, yet young, who breathe the balm
Of summer-winters by the palm
And orange grove of Paraguay,

I tolerant of the colder time,
 Who love the winter woods, to trace
 On paler heavens the branching grace
 Of leafless elm, or naked lime,

 And see my cedar green, and there
 My giant ilex keeping leaf
 When frost is keen and days are brief—
 Or marvel how in English air

 My yucca, which no winter quells,
 Altho' the months have scarce begun,
 Has push'd toward our faintest sun
 A spike of half-accomplish'd bells—

To Ulysses, p. 863.

like the fruit
 Which in our winter woodland looks a flower.¹

A Dedication, p. 240.
 Vol. II., p. 310.

The fruit of the Spindle-tree hangs very lightly on its cherry-like stalks. Hulme, in his book *Wild Fruits of the Country-side*, p. 57, writes as follows about it:—"In September the curious pendant four-celled seed-vessels are ripened. They are produced in great abundance, and remain on the trees, if unmolested, long after the tree has lost all its leaves. They are ordinarily of a bright rosy pink, and of a waxen texture, but occasionally we may find them pure white. They are of very quaint

¹ The fruit of the Spindle-tree (*Euonymus Europæus*).

and beautiful form, and when fully ripe open out and show within their cup the brilliant orange coloured seeds." We see from this description what a true picture the quotation is.

Made the noise of frosty woodlands, when they
shiver in January.

Boëdicea, p. 242.
Vol. II., p. 318.

But pure as lines of green that streak the white
Of the first snowdrop's inner leaves.

The Princess, p. 198.

Wavers on her thin stem the snowdrop cold
That trembles not to kisses of the bee.

The Progress of Spring, p. 865.

When the flower appears the bees are in winter
quarters.

PLANTS

DESCRIPTIONS

The following quotations are poetical descriptions
introducing various flowers of plants and trees :—

Bring orchis, bring the foxglove spire,
The little speedwell's darling blue,
Deep tulips dash'd with fiery dew,
Laburnums, dropping-wells of fire.

In Memoriam, p. 268.

The "little speedwell" almost certainly refers to *Veronica Buxbaumii*, the most brightly blue-flowered of the smaller speedwells.—*D. P.*

Ray round with flames her disk of seed.

In Memoriam, p. 275.

This refers to the sunflower.

Like a blossom vermeil-white,
That lightly breaks a faded flower-sheath
Moved the fair Enid, all in faded silk.

The Marriage of Geraint, p. 346.

More crumpled than a poppy from the sheath.

The Princess, p. 196.

Canst thou endure to be a beggar whose
Whole life hath been folded like a blossom in the sheath.

The Foresters, p. 806.

A clear germander eye.

Sea-Dreams, p. 156.

This refers to the "germander - speedwell," *Veronica Chamaedrys*, the flower of which is a clear azure blue, and deserves the epithet "eye," which is not applicable to any of the "germanders." The commonest of the true "germanders," *Teucrium Scorodonia*, also termed the "wood-sage,"

has dirty yellow flowers. The "water germander," *Teucrium Scordium*, has a rose-purple flower, so has *T. Botrys*; the flower of *T. Chamaedrys*, the only other species met with in Britain, is rosy. Besides, none of them have a flower which can be likened to an eye.—*D. P.*

And lightly was her slender nose
Tip-tilted like the petal of a flower.

Gareth and Lynette, p. 327.

His charger trampling many a prickly star
Of sprouted thistle on the broken stones.

The Marriage of Geraint, p. 345.

Vol. III., p. 106.

The stubborn thistle bursting
Into glossy purples, which outredden
All voluptuous garden-roses.
Ode on the Death of the Duke of Wellington, p. 220.
Vol. II., p. 241.

While you were running down the sands, and made
The dimpled founce of the sea-furbelow flap.

Sea-Dreams, p. 160.

Vol. II., p. 203.

This name sea-furbelow is given to various seaweeds, *Laminaria saccharina* specially merits the above description.—*J. B. F.*

On a sudden a low breath
 Of tender air made tremble in the hedge
 The fragile bindweed-bells and briony rings ;
 And he look'd up.

Aylmer's Field, p. 142.

The furzy prickly fire the dells,
 The foxglove cluster dappled bells.

The Two Voices, p. 31.

In either hand he bore
 What dazzled all, and shone far off as shines
 A field of charlock in the sudden sun
 Between two showers, a cloth of palest gold.

Gareth and Lynette, p. 323-324.

O trefoil sparkling in the rainy plain.

Gareth and Lynette, p. 336.

The ground-flame of the crocus breaks the mould.

The Progress of Spring, p. 865.

As cowslip unto oxslip is,
 So seems she to the boy.

The Talking Oak, p. 90.

Vol. II., p. 15.

The long catkins, the flowers of the hazel tree,
 are alluded to as tassels :—

and heard
 The low love-language of the bird
 In native hazels tassel-hung.

In Memoriam, p. 276.

and rapt below
 Thro' all the dewy-tassell'd wood,
In Memoriam, p. 270.

And we have two descriptive pictures of
 creepers :—

A leaning and upbearing parasite,
 Clothing the stem, which else had fallen quite
 With cluster'd flower-bells and ambrosial orbs
 Of rich fruit-bunches leaning on each other—

Isabel, p. 7.
 Vol. I., p. 27.

And monstrous ivy-stems
 Claspt the gray wall with hairy-fibred arms,
 And suck'd the joining of the stones, and look'd
 A knot, beneath, of snakes, aloft, a grove.

The Marriage of Geraint, p. 346.
 Vol. III., p. 106.

In *Aylmer's Field* there is a wonderful description of cottages, each cottage or garden having some creeper or flower as a dominant feature of the same. We give the whole description below and would like to point out particularly the cottage which wore "a close-set robe of jasmine sown with stars," which so admirably describes the small flower :—

“ . . . here was one that, summer blanch'd,
Was parcel-bearded with the traveller's joy
In Autumn, parcel ivy-clad ; and here
The warm-blue breathings of a hidden hearth
Broke from a bower of vine and honey-suckle :
One look'd all rose tree, and another wore
A close-set robe of jasmine sown with stars :
This had a rosy sea of gilly flowers
About it ; this a milky-way on earth,
Like visions in the Northern dreamer's heavens,
A lily-avenue climbing to the doors :
One, almost to the martin-haunted eaves
A summer burial deep in hollyhocks ;
Each, its own charm.”

Aylmer's Field, p. 145.

Gardens and localities are portrayed often ; we
give two other quotations :—

On either side
All round about the fragrant marge
From fluted vase, and brazen urn
In order, eastern flowers large,
Some dropping low their crimson bells
Half-closed, and others studded wide
With disks and tiars, fed the time
With odour in the golden prime
Of good Haroun Alraschid.

Recollections of the Arabian Nights, p. 10.

All round a hedge upshoots, and shows
At distance like a little wood ;
Thorns, ivies, woodbines, mistletoes,
And grapes with bunches red as blood ;

All creeping plants, a wall of green
 Close-matted, bur and brake and brier,
 And glimpsing over these, just seen,
 High up, the topmost palace-spire.

The Day-Dream, p. 105.
 Vol. II. p. 68.

Descriptions of tropical vegetation :—

When he spoke of his tropical home in the canes by the
 purple tide,
 And the high star-crowns of his palms on the deep-wooded
 mountain-side,
 And cliffs all robed in lianas that dropt to the brink of his
 bay,
 And trees like the towers of a minster, the sons of a winter-
 less day.

The Wreck, p. 543.

Larger constellations burning, mellow moons and happy
 skies,
 Breadths of tropic shade and palms in cluster, knots of
 Paradise.

Locksley Hall, p. 102.
 Vol. II., p. 57.

CHARACTERISTICS

“O dewy flowers that open to the sun,
 O dewy flowers that close when day is done,
 Blow sweetly : . . .”

Gareth and Lynette, p. 335.
 Vol. III., p. 79.

The daisy closes when out of the sun and also
in the rain :—

The daisy will shut to the shadow, . . .

The Wreck, p. 342.

Who usherest in the dolorous hour
With thy quick tears that make the rose
Pull sideways, and the daisy close
Her crimson fringes to the shower ;

In Memoriam, p. 265.

Vol. V., p. 119.

Here is another reference to the daisy. It
illustrates that the daisies have been turned on
one side showing their pink undersides.

I know the way she went
Home with her maiden posy,
For her feet have touch'd the meadows
And left the daisies rosy.

Maud, p. 294.

And like a flower that cannot all unfold,
So drenched it is with tempest, to the sun,
Yet, as it may, turns toward him.

The Princess, p. 212.

A Jonah's gourd,
Up in one night and due to sudden sun :

The Princess, p. 190.

Caught by the flower that closes on the fly, . . .

The Ring, p. 856.

This is perhaps an allusion to the fact that the Catch-fly (*Silene nutans*) opens its flowers on three successive nights, but closes them during the intervening days. The object of the arrangement, however, is not to imprison callers, but to exclude winged visitors while their presence is not desired. The viscosity of stem and calyx, which indirectly explains the popular name of the plant, is in this case purely defensive and guards the flowers against wingless intruders.

If it be suggested that the poet had in mind some plant of insectivorous habit, this involves the assumption that "flower" here is used figuratively for the plant which bears it, since no insectivorous plant uses its flowers as organs of digestion, and no flower closes upon its insect visitors. In the Birthwort family (*Aristolochia*) the flower, and in the Aroid family (*Arum*, *Typhonium*, *Axisema*, *Sauromatum*, and others) the inflorescence imprison flies, at least for a time. But the mechanism is that of a trap into which insects readily get, but from which they cannot readily escape; there is no device for closing on the insect, and it is not to the interest of the plant to harm its visitors.

The Sundews, if insectivorous plants are intended, may well have been in the poet's mind,

since these *do* "close upon the fly," but with their leaves, not with their flowers.—*D. P.*

Flowers and human attributes are compared.

A man who is true at heart though a little shifty in ways is described as follows :—

But as the water lily starts and slides
Upon the level in little puffs of wind,
Tho' anchor'd to the bottom, such is he.

The Princess, p. 190.

And with regard to certain people :—

And some are reeds, that one time sway to the current,
And to the wind another.

Becket, p. 711.

HABITAT

The following quotation is obviously a reference to marsh-land; it is the home of reeds, and malaria is often associated with it :—

A flat malarian world of reed and rush !

The Golder Supper, p. 495.

. . . . conceal'd

There in the many-knotted waterflags,
That whistled stiff and dry about the marge.

Morte d'Arthur, p. 69.

About a stone-cast from the wall
A sluice with blacken'd waters slept,
And o'er it many, round and small,
The cluster'd marish-mosses crept.

Mariana, p. 7.
Vol. I., p. 29.

Still hither, thither idly sway'd
Like those long mosses in the stream.
The Miller's Daughter, p. 37.
Vol. I. p. 147.

A land of hops and poppy-mingled corn.
Aylmer's Field, p. 143.

TREES

Turning now to trees we find that they are quite as frequently referred to as flowers. It would seem that Tennyson carefully observed them in his walks, for he writes about them in a spirit of comradeship.

THE OAK

In the poem "The Talking Oak," we are given the history of the development of the tree, the different physical phases it goes through being blended into the story.

The circles in the grain.

It is generally known that the age of a tree is told by the number of circles in the grain of the wood; in the following the oak tells its age:—

I swear, by leaf, and wind, and rain,
(And hear me with thine ears,)
That, tho' I circle in the grain
Five hundred rings of years—

The Talking Oak, p. 89.
Vol. II., p. 14.

Beneath huge trees, a thousand rings of Spring
In every bole.

The Princess, p. 199.

The Acorns.

When referring to an acorn which had dropped on Olivia, the oak is made to say,

But in a pet she started up,
And pluck'd it out, and drew
My little oakling from the cup,
And flung him in the dew.

The Talking Oak, p. 91.

And the Galls.

May insects prick
Each leaf into a gall.

The Talking Oak, p. 89.
Vol. II., p. 14.

In connection with galls we read in "A Text-Book of Botany," by Strasburger, page 165 :—

"Another peculiar example of abnormal growths is afforded by the Galls or Cecidia produced on plants by Fungi, or more frequently by insects, worms, and arthropods."

Those specially interested in this subject may care to refer to "British Oak Galls, and British Vegetable Galls," by Edward T. Connold, published by Adiard & Son, Bartholomew Close, London.

THORN TREES

In *The Holy Grail* we find a reference to the famous thorn tree of Glastonbury :—

To Glastonbury, where the winter thorn
Blossoms at Christmas.

The Holy Grail, p. 419.

In relation to this tree it may be well to quote from Murray's "Guide to Somersetshire," for scions of this historical tree still exist and possess its peculiarity as regards blossoming. What remained of the original tree was felled at the time of the "Great Rebellion" by a "military saint." After this Murray tells us: "Though the original holy Thorn has passed away, the curious visitor may find several successors to its name and virtues

in the neighbourhood. According to Withering, it is a distinct variety of the common hawthorn blossoming twice a year." "The winter blossoms," he says, "which are about the size of a sixpence, appear about Christmas, and sooner if the winter be severe." In 1753, when the change of style was made, the Thorn was anxiously watched to see whether it would conform to the Act of Parliament, and great was the triumph of opponents of the change when the blossoms which had refused to appear on the new Christmas Day came forth in full luxuriance on the old anniversary, January 5th.

Aliquando dormitat bonus Homerus. We may accept Withering's statement that the Glastonbury thorn is a distinct variety of the common hawthorn, for scientific works at times do the same, and it is named in collections *Cratægus Oxyacantha*, variety *praecox*. In reality, however, it is a "sport" rather than what is technically termed a variety. But it does not blossom twice a year, and when Withering says that the winter blossoms appear about Christmas, it is necessary to remark that the statement calls for considerable qualification, for we have only seen it in blossom once during Christmas week, or between Christmas week and January 5 in the course of the last five years.

Nor is Withering right in thinking that it blossoms before Christmas if the winter be severe; it does this only if the autumn and early winter have been exceptionally mild.

In 1908, Glastonbury thorns, in counties so remote as Surrey and Devon, were as closely covered with fully open white blossoms during the last two weeks of November as their normally flowering brethren were in the early summer. But in 1909 the same Glastonbury thorn in Surrey, though covered with flower-buds by the first week of December, had not opened a single flower between then and the new year. What is more interesting still to note is that while this tree at the beginning of April, 1910, is still covered with flower-buds to all appearance unscathed by the weather, not a single flower has yet opened. The triumph of the opponents of the change of "style," to which the "Somersetshire Guide" alludes, was therefore based on a coincidence of a singularly accidental character.—*D. P.*, April 3, 1910.

Hail ample presence of a Queen,
Bountiful, beautiful, apparell'd gay,
Whose mantle, every shade of glancing green,
Flies back in fragrant breezes to display
A tunic white as May!

The Progress of Spring, p. 866.

I wept, tho' I should die, I know
That all about the thorn will blow
In tufts of rosy-tinted snow ; . .

The Two Voices, p. 31.

The blackthorn-blossom fades and falls and leaves the bitter
sloe, . . .

The Flight, p. 552.

Here the blackthorn gives a date in a botanical
representation of time :—

A rhyme that flower'd betwixt the whitening sloe
And kingcup blaze.

To M.B., p. 865.

Which would mean that the poem was written
some time during the spring and early summer.
The Blackthorn sometimes goes by the name
of sloe-tree, and Tennyson was evidently calling
it by that name here and alluding to the blossoms.

The flowering period of the blackthorn or sloe
according to Hulme (*Wild Fruits of the Countryside*, p. 53).

"Varies naturally in varying localities and conditions of
growth, but may be taken as about the beginning of March
to the middle of April. The blackthorn is so called to
distinguish it from the whitethorn or hawthorn."

In the autumn there is a great distinction between
the two trees as the hawthorn has red berries and
the blackthorn purple ones.

With regard to white and black thorn trees, the blackthorn (*Prunus*) blossoms in March and April; the whitethorn (*Cratægus*) does so two months later.

HORSE CHESTNUT

Horse chestnut trees are alluded to several times.
Buds and blossoms.

Or those three chestnuts near, that hung
In masses thick with milky cones.

The Miller's Daughter, p. 37.

I came and sat
Below the chestnuts when their buds
Were glistening to the breezy blue.

The Miller's Daughter, p. 37.

The first reading of this was

Beneath those gummy chestnut buds
That glistened in the April blue.

Eversley Edition, Poems. Vol. I. p. 356.

. . . a but less vivid hue
Than of that islet in the chestnut-bloom
Flamed in his cheek; . . .

Aylmer's Field, p. 143.

This is an allusion to the patch of red at the base of the petal.

The leaf.

And drooping chestnut-buds began
To spread into the perfect fan,
Above the teeming ground.

Sir Launcelot and Queen Guinevere, p. 118.

The perfect fan is an allusion to the double circumstance that the leaf is composed of leaflets which radiate from the apex of the leaf-stalk, and that when the leaf-buds first open the tips of these leaflets all point downwards, only assuming the horizontal position when they become older and firmer.—*D. P.*

. . . and her hair
In gloss and hue the chestnut, when the shell
Divides threefold to show the fruit within.

The Brook, p. 140.

ASH

Turning now to the Ash tree, the following is quite a botanical reference though used as a simile :—

More black than ash-buds in the front of March.

The Gardener's Daughter, p. 73.

In connection with this we quote from Edward Hulme's book *Wild Fruits of the Country Side*, p. 139, in which the author refers to this very quotation :—

"One striking feature in the ash is the curiously sooty blackness of the buds ; this characteristic alone would suffice to identify the tree while yet leafless. It will be recalled how Tennyson, whose nature touches are so numerous, so appreciative, so admirable and so true, declares of one of his heroines that her hair was blacker even than the ash-buds of March."

There is an allusion to the fact that the Ash tree gets its leaves so much later than other trees :—

Why lingerith she to clothe her heart with love,
Delaying as the tender ash delays
To clothe herself, when all the woods are green?

The Princess, A Medley, p. 187.

Vol. IV., p. 71.

Here again we will quote from the same book by Hulme, p. 139.

"The foliage of the ash is of a light and bright green that often causes a very pleasant contrast with the surrounding trees. . . . The leaves of the Ash have two great drawbacks: they appear late, and disappear so soon! The tree is rarely in leaf before June, and at the first touch of frost, no matter how early, the foliage falls rapidly."

YEW

The yew tree with its dull evergreen foliage is a singularly dark object in Spring, amongst all the fresh new green of the surrounding trees ; it has an apparently unchanging aspect, unaffected by heat or cold :—

Oh not for thee the glow, the bloom,
Who changest not in any gale,
Nor branding summer suns avail
To touch thy thousand years of gloom : . . .

In Memoriam, p. 248.

But to those initiated in botanical matters, the Spring does produce some change in the tree though it is not conspicuous. At this season the pollen of the flower is often blown off in clouds, and this is poetically referred to by Tennyson as "smoke" :—

Beneath a world-old yew-tree, darkening half
The cloisters on a gustful April morn
That puff'd the swaying branches into smoke.

The Holy Grail, p. 419.

'O brother, I have seen this yew-tree smoke,
Spring after spring, for half a hundred years : . . .

The Holy Grail, p. 419.
Vol. III., p. 258.

With fruitful cloud and living smoke,
Dark yew.

In Memoriam, p. 257.

In *In Memoriam* there are still other allusions to the tree. The new green which appears in the Spring :—

Thy gloom is kindled at the tips
And passes into gloom again.

In Memoriam, p. 257.

And here to the flower :—

To thee too comes the golden hour
When flower is feeling after flower.

In Memoriam, p. 257.

ELM

Our elmtree's ruddy-hearted blossom-flake
Is fluttering down.

To Mary Boyle, p. 864.

. . . and like an old dwarf-elm
That turns its back on the salt blast, . . .

Pelleas and Ettarre, p. 442.

Vol. III., p. 314.

As may be seen by those who take note, the prevailing wind may be ascertained in an exposed place by the direction the trees lean. But a theory has been put forward by an authority on botanical matters suggesting that the absence of branches will always be found on the side nearest the sea, and that this circumstance is due to the wind of that direction having salt in it, which kills the young shoots. It is to be wondered whether Tennyson had this idea in his mind when he wrote the above.

VARIOUS

There are references to a variety of trees, almost each one bringing out some dominant feature or characteristic.

Here is the life-history of a tree.

Lo ! in the middle of the wood,
The folded leaf is woo'd from out the bud
With winds upon the branch, and there
Grows green and broad, and takes no care,
Sun-steep'd at noon, and in the moon
Nightly dew-fed ; and turning yellow
Falls, and floats adown the air.

Choric Song, p. 55.

Vol. I., p. 211.

The perpetual movement of the aspen leaves : —

And ever-tremulous aspen-trees,

Lancelot and Elaine, p. 404.

Vol. III., p. 222.

A breeze turning the leaves of the willows and thus showing the paler side.

Willows whiten, aspens quiver,
Little breezes dusk and shiver
Thro' the wave that runs for ever
By the island in the river
Flowing down to Camelot.

Lady of Shalott, p. 28.

Realms of upland, prodigal in oil
And hoary to the wind.

The Palace of Art, p. 45.

The picture is that of a wind-swept Italian plain with the hills behind it clothed with olive trees, and therefore "prodigal in oil," the white under-sides of the leaves rendered visible by the breeze and giving a "hoary" tint to the landscape. In "The Daisy" the same idea is more elaborated, for the olives are spoken of as "green" in a place where we may assume them sheltered from the breeze, while in the same verse the poet speaks of an "'olive-hoary' cape in ocean" where naturally there might be a breeze.—*D. P.*

The Daisy, p. 233.

The leaves of the poplar are of a grey-green tint; the poet refers to the white poplar or abele, not the common poplar :—

Hard by a poplar shook alway,
All silver-green with gnarled bark : . . .

Mariana, p. 7.

Vol. I., p. 29.

Tennyson thus refers to the noise of the leaves in a breeze :—

And poplars made a noise of falling showers.

Lancelot and Elaine, p. 402.

The injuriousness of the lichen is here suggested :—

Wan-sallow as the plant that feels itself

Root-bitten by white lichen, . . .

Gareth and Lynette, p. 325.

Vol. III., p. 54.

Stigand, in *Harold*, refers to himself as :—

Dry as an old wood-fungus on a dead tree, . . .

Harold, p. 670.

And here is yet another allusion to a tree-fungus :—

As one

That smells a foul-flesh'd agaric in the holt,

And deems it carrion of some woodland thing, . . .

Gareth and Lynette, p. 329.

Vol. III., p. 66.

James in *The Golden Year* is like :—

An oaken stock in winter woods,

O'erflourished with the hoary clematis : . . .

The Golden Year, p. 95.

Kate Willows is :—

Straight, but as lissome as a hazel wand ; . . .

The Brook, p. 140.

We have also several similes to describe colour :—

As light a flush

As hardly tints the blossom of the quince

Would mar their charm of stainless maidenhood.

Balin and Balan, p. 373.

In colour like the satin-shining palm
On sallows in the windy gleams of March : . . .

Merlin and Vivien, p. 384.

That like a purple beech among the greens
Looks out of place : . . .

Edwin Morris; or The Lake, p. 84.

The following describes the effects of heavy rain
and wind on trees :—

. . . leaves
Laid their green faces flat against the panes,
Sprays grated, and the canker'd boughs without
Whined in the wood ; . . .

Balin and Balan, p. 375.

The next verses give instances of Tennyson
attributing human actions to trees :—

The mountain stirr'd its bushy crown,
And, as tradition teaches,
Young ashes pirouetted down
Coquetting with young beeches ;
And briony-vine and ivy-wreath
Ran forward to his rhyming,
And from the valleys underneath
Came little copses climbing.

The linden broke her ranks and rent
The woodbine wreaths that bind her,
And down the middle, buzz ! she went
With all her bees behind her ;

The poplars, in long order due,
With cypress promenaded,
The shock-head willows two and two
By rivers galloped.

Came wet-shod alder from the wave,
Came yews, a dismal coterie ;
Each pluck't his one foot from the grave,
Poussetting with a sloe-tree ;
Old elms came breaking from the vine,
The vine stream'd out to follow,
And, sweating rosin, plump'd the pine
From many a cloudy hollow.

Amphion, pp. 108-109.

Our little knowledge :—

Flower in the crannied wall,
I pluck you out of the crannies,
I hold you here, root and all, in my hand,
Little flower—but *if* I could understand
What you are, root and all, and all in all,
I should know what God and man is.

P. 240.

A compact summary of what, after all that has been done in the way of extending natural knowledge, still remains untouched by our endeavours to wrest her secrets from nature.—*D. P.*

SECTION XV

WATER AND AQUATIC LIFE

Waves breaking on shore.—Waves with spray.—Quiet waves.—Stormy waves.—Rollers.—Tides and currents.—Waterfalls.—The sound of the sea.—Coast erosion.—Aquatic Life.—Various references.

WAVES BREAKING ON SHORE

. . . as the crest of some slow-arching wave,
Heard in dead night along that table-shore,
Drops flat, and after the great waters break
Whitening for half a league, and thin themselves,
Far over sands marbled with moon and cloud,
From less and less to nothing ; thus he fell
Head-heavy ; . . .

The Last Tournament, p. 451.

And then the two
Dropt to the cove, and watch'd the great sea fall,
Wave after wave, each mightier than the last,
Till last, a ninth one, gathering half the deep
And full of voices, slowly rose and plunged
Roaring, . . .

The Coming of Arthur, p. 315.
Vol. III., p. 27.

Roar'd as when the roaring breakers boom and blanch
on the precipices.

Boödicea, p. 242.

Vol. II., p. 318.

Listening now to the tide in its broad-flung ship-wrecking
roar,
Now to the scream of a madden'd beach dragg'd down by
the wave.

Maud, p. 289.

Vol. IV., p. 167.

So shape chased shape as swift as, when to land
Bluster the winds and tides the self-same way,
Crisp foam-flakes scud along the level sand,
Torn from the fringe of spray.

A Dream of Fair Women, p. 57.

Vol. I., p. 218.

WAVES WITH SPRAY

Tennyson refers to spray as *smoke* several
times :—

. . . a full tide
Rose with ground-swell, which, on the foremost rocks
Touching, up jetted in spirits of wild *sea-smoke*,
And scaled in sheets of wasteful foam, and fell
In vast sea-cataracts—even and anon
Dead claps of thunder from within the cliffs
Heard thro' the living roar.

Sea-Dreams, p. 156.

Vol. II., p. 195.

194 WATER AND AQUATIC LIFE

. . . as a wild wave in the wide North-sea,
Green-glimmering toward the summit, bears with all
Its stormy crests that *smoke* against the skies,
Down on a bark, and overbears the bark,
And him that helms it.

Lancelot and Elaine, p. 403.
Vol. III., p. 220.

Slow-moving as a wave against the wind,
That flings a mist behind it in the sun . . .

The Lover's Tale, p. 498.

And his cheek brighten'd as the foam-bow brightens
When the wind blows the foam, . . .

Enone, p. 40.
Vol. I., p. 163.
E.E. Vol. I., p. 361.

Spray carried along the surface of the sea is called spindrift; it practically forms rain-clouds, and with a bright sun foam-bows are formed, but as the spray does not extend very high only the lower extremities of the bows are generally seen.

QUIET WAVES

Calm on the seas, and silver sleep,
And waves that sway themselves in rest,

In Memoriam, p. 250.
Vol V., p. 62.

Which was lined
And rippled like an ever-fleeting wave,
Gareth and Lynette, p. 321.
Vol. III., p. 45.

Like calming oil on all their stormy creeds,
And fill the hollows between wave and wave ;
Akbar's Dream, p. 882.

Pouring oil on a water surface greatly impedes
the formation of waves.

STORMY WAVES.

And watch the curl'd white of the coming wave
Glass'd in the slippery sand before it breaks ?
Merlin and Vivien, p. 385.
Vol. III. p. 175.

Locksley Hall, that in the distance overlooks the sandy
tracts,
And the hollow ocean-ridges roaring into cataracts.
Locksley Hall, p. 98.
Vol. II., p. 41.

Late, my grandson ! Half the morning have I paced these
sandy tracts,
Watch'd again the hollow ridges roaring into cataracts.
Locksley Hall, Sixty Years After, p. 560.

ROLLERS

The league-long roller thundering on the reef.
Enoch Arden, p. 134.
Vol. V., p. 31.

And could not wholly bring him under, more
Than loud Southwesterns, rolling ridge on ridge,
The buoy that rides at sea, and dips and springs
For ever ; . . .

Gareth and Lynette, p. 336.
Vol. III., p. 82.

TIDES AND CURRENTS

The tidal water movement is chiefly controlled by the attraction of the moon because she is so much nearer to us than the sun. Hence, the water rises and falls, flows and ebbs, twice in a lunar day of 24 hours 54 minutes.

A still salt pool, lock'd in with bars of sand,
Left on the shore ; that hears all night
The plunging seas draw backward from the land
Their *moon-led* waters white.

The Palace of Art, p. 48.
Vol. I., p. 187.

Ask me no more : the moon may draw the sea ;

The Princess, p. 210.
Vol. IV., p. 133.

But such a tide as moving seems asleep,
Too full for sound and foam,
When that which drew from out the boundless deep
Turns again home.

Crossing the Bar, p. 894.

Yet seas, that daily gain upon the shore,
Have ebb and flow conditioning their march,

The Golden Year, p. 94.
Vol. II., p. 30.

Then I felt
That I could rest, a rock in ebbs and flows,
Fix't on her faith.

The Marriage of Geraint, p. 353.
Vol. III., p. 124.

They know too that whene'er
In our free Hall, where each philosophy
And mood of faith may hold its own, they blurt
Their furious formalisms, I but hear
The clash of tides that meet in narrow seas.

Akbar's Dream, p. 881.

There twice a day the Severn fills ;
The salt sea-water passes by,
And hushes half the babbling Wye,
And makes a silence in the hills.

In Memoriam, p. 252.
E.E. Vol. III., p. 230.

In connection with the above quotation the note
in the Eversley Edition reads as follows :

“Taken from my own observation—the rapids
of the Wye are stilled by the incoming sea.”

198 WATER AND AQUATIC LIFE

Of the great ocean currents the Gulf Stream is the only one referred to :—

Ev'n as the warm gulf-stream of Florida
Floats far away into the Northern seas
The lavish growths of southern Mexico.

Early Sonnets, III., p. 25.
Vol. I., p. 105.

WATERFALLS

The spray from waterfalls is referred to as *smoke* as in the case of waves :—

. . . and leave
The monstrous ledges there to slope, and spill
Their thousand wreaths of dangling water-*smoke*,
That like a broken purpose waste in air :

The Princess, p. 213.
Vol. IV., p. 143.

And like a downward smoke, the slender stream
Along the cliff to fall and pause and fall did seem.
A land of streams ! some, like a downward *smoke*,
Slow-dropping veils of thinnest lawn, did go ;
And some thro' wavering lights and shadows broke,
Rolling a slumbrous sheet of foam below.

The Lotos-Eaters, p. 54.
Vol. I., p. 208.
E.E. Vol. I., p. 372.

Description taken from the waterfall at Gavarnie
in the Pyrenees when Tennyson was 20 or 21

years of age. "Lying among these mountains before this waterfall, that comes down one thousand or twelve hundred feet, I sketched it (according to my custom then) in these words."

. . . as a stream that spouting from a cliff
Fails in mid-air, but gathering at the base
Re-makes itself, and flashes down the vale—

Guinevere, p. 465.
Vol. III., p. 372.

THE SOUND OF THE SEA

And may there be no moaning of the bar,
Crossing the Bar, p. 894.

The moanings of the homeless sea.
In Memoriam, p. 256.

And the low moan of leaden-colour'd seas.
Enoch Arden, p. 134.
Vol. V., p. 32.

There came so loud a calling of the sea,
Enoch Arden, p. 139.
E.E. Vol. III., p. 193.

"The calling of the sea" is a term used chiefly in the West of England to signify the noise produced by a ground swell.

COAST EROSION

In the course of time an impression is made on the hardest of rock by the wash of the sea :—

. . . but since I knew
No rock so hard but that a little wave
May beat admission in a thousand years,
I recommenced; . . .

The Princess, p. 182.

We left the dying ebb that faintly lipp'd
The flat red granite; . . .

Audley Court, p. 80.

For tho' the drop may hollow out the dead
stone, doth not the living skin thicken against perpetual
whippings?

Becket, p. 731.

AQUATIC LIFE

In *The Mermaid* there is this delightful reference to "things in the sea," it conveys to our minds a picture of marine life, a perfect world in itself.

Then all the dry pied things that be
In the hueless mosses under the sea

.
All things that are forked, and horned, and soft
Would lean out from the hollow sphere of the sea,
All looking down for the love of me.

The Mermaid, p. 20.

There is a reference also to sponges and polypi :—

. . . above him swell
Huge sponges of millennial growth and height ;
And far away into the sickly light,
From many a wondrous grot and secret cell
Unnumber'd and enormous polypi
Winnow with giant arms the slumbering green.

The Kraken p. 6

Vol. I., p. 22.

A shell and the form of life that lives in it is
thus referred to in *Maud* :—

I.

See what a lovely shell,
Small and pure as a pearl,
Lying close to my foot,
Frail, but a work divine,
Made so fairly well
With delicate spire and whorl
How exquisitely minute,
A miracle of design !

II.

What is it ? a learned man
Could give it a clumsy name
Let him name it who can,
The beauty would be the same

III.

The tiny cell is forlorn,
Void of the little living will
That made it stir on the shore.
Did he stand at the diamond door

Of his house in a rainbow frill ?
 Did he push, when he was uncurl'd,
 A golden foot or a fairy horn
 Thro' his dim-water-world ?

IV.

Slight, to be crush'd with a tap
 Of my finger-nail on the sand,
 Small, but a work divine,
 Frail, but of force to withstand,
 Year upon year, the shock
 Of cataract seas that snap
 The three-decker's oaken spine
 Athwart the ledges of rock,
 Here on the Breton strand ?

Maud, p. 302.

Vol. IV., pp. 228-229.

We recognise here a type of Gasteropod shell. The Gasteropoda are described as "Molluscs, with distinct head often bearing tentacles, a ventral, muscular foot, and undivided mantle, which usually secretes a shell, simple and plate-like, conical, or spirally twisted (Claus)." This extract from *An Outline of the Natural History of our Shores*, by Joseph Sinel, p. 198, shows us what an accurate portrayal Tennyson's is.

Again a shell is alluded to, and this time to describe the colour of a dress :—

‘See here, my child, how fresh the colours look
How fast they hold like colours of a shell
That keeps the wear and polish of the wave.’

The Marriage of Geraint, p. 351.
Vol. III., p. 119.

References to fishes are few :—

But at the flash and motion of the man
They vanish panic-stricken, like a shoal
Of darting fish, that on a summer morn
Adown the crystal dykes at Camelot
Come slipping o’er their shadows on the sand,
But if a man who stands upon the brink
But lift a shining hand against the sun,
There is not left the twinkle of a fin
Betwixt the cressy islets white in flower.

Geraint and Enid, p. 361.

And see the minnows everywhere
In crystal eddies glance and poise,

The Miller’s Daughter, p. 37.
Vol. I., p. 147.

Enid compares herself in her shabby clothes
amongst all the gaily attired people of the Court
to a sick gold-fish which has lost all its lustre :—

. . . a pool of golden carp ;
And one was patched and blurr’d and lustreless
Among his burnish’d brethren of the pool.

The Marriage of Geraint, p. 351.

The following alludes to phosphorescence, a luminosity of the sea caused by the presence of minute forms of life :—

At times the whole sea burn'd, at times
With wakes of fire we tore the dark ;

The Voyage, p. 118.

Vol. II., p. 120.

VARIOUS REFERENCES

There are other passages dealing with water. A river flowing out for some miles into the sea :—

Which with increasing might doth forward flee
By town, and tower, and hill, and cape, and isle,
And in the middle of the green salt sea
Keeps his blue waters fresh for many a mile.

Early Sonnets, III., p. 25.

Vol. I., p. 105.

The fresh water from large rivers goes a considerable distance seaward *on top of* the sea-water. Orinoco water, to my own knowledge, goes 30 miles out to sea. It is stated in the South American Sailing Directions that the fresh water flows 50 miles out to sea from the mouth of the Amazon on top of the salt water, and that it is darker in colour. In the case of the Congo (African Pilot, Part II., pp. 149-150) the water is

dark and peaty in colour ; 9 miles to seaward the surface water is quite fresh, and 40 miles to seaward the surface fresh water is only partially mingled with the salt water. The discoloration caused by fresh water has been known to extend 300 miles to seaward, while the current also has been reported to be perceptible.—*H. F. O.*

Fresh water springs in the sea :—

As I have heard that, somewhere in the main,
Fresh water springs come up through bitter brine.

Early Sonnets, p. 27.
Vol. I., p. 112.

And beating up thro' all the bitter world,
Like fountains of sweet water in the sea,
Kept him a living soul.

Enoch Arden, p. 137.
Vol. V., p. 40.

There is a spring in Syracuse Harbour called "The Fountain of Arethusa," the water from which flows up to its surface. I am indebted to Captain Tizard for this information. It is possible that Tennyson may have had this very instance in his mind when he wrote the lines quoted. It would appear to be a very appropriate illustration of the fact, and one beyond all doubt.—*A. M. F.*

A description of a brook :—

And chiefly from the brook that loves
To purl o'er matted cress and ribbed sand,
Or dimple in the dark of rushy coves,
Drawing into his narrow earthen urn,
 In every elbow and turn,
The filter'd tribute of the rough woodland.

Ode to Memory, p. 12.
Vol. I., p. 52.

Ripples caused by any disturbance on water :—

 . . . and as when
A stone is flung into some sleeping tarn,
The circle widens till it lip the marge,
Spread the slow smile thro' all her company.

Pelleas and Ettarre, p. 434.
Vol. III., p. 296.

Then leapt a trout. In lazy mood
I watched the little circles die ;
They past into the level flood,
And there a vision caught my eye ;

The Miller's Daughter, p. 37.
Vol. I., p. 148.

And Gareth loosed the stone
From off his neck, then in the mere beside
Tumbled it ; oilily bubbled up the mere.

Gareth and Lynette, p. 330.
Vol. III., p. 69.

In marshy places, bubbles of gas (carburetted or phosphoretted hydrogen) sometimes bubble up, they are due to the decomposition of animal or vegetable matter beneath. At times, owing to spontaneous combustion, they become luminous, hence the *ignis fatuus*, jack-o'-lantern, or corpse candle, seen at night in these localities.

When we look into water that is moving it often seems that the pebbles at the bottom are in motion :—

As bottom agates seen to wave and float
In crystal currents of clear morning seas.

The Princess, p. 178.

Reflection in water :—

And in the stream beneath him, shone
Immingled with Heaven's azure waveringly,
The gay pavilion and the naked feet,
His arms, the rosy raiment and the star.

Gareth and Lynette, p. 332
Vol. III., p. 73.

Tremulous, all awry,
Blurr'd like a landskip in a ruffled pool,—
Not one stroke firm.

Romney's Remorse, p. 871.

208 WATER AND AQUATIC LIFE

Refraction in water.

For all we have power to see is a straight staff bent in a pool ;

The Higher Pantheism, p. 239.
Vol. II., p. 305.

When a ray of light enters or leaves a water surface at any other than a right angle it is bent out of its course. Hence a straight stick immersed in water appears bent where it enters.

SECTION XVI

THE IMPORTANCE OF KNOWLEDGE

SCIENCE AS A SUBJECT OF STUDY

 then we dipt in all
That treats of whatsoever is, the state,
The total chronicles of man, the mind,
The morals, something of the frame, the rock,
The star, the bird, the fish, the shell, the flower,
Electric, chemic laws, and all the rest.

The Princess, pp. 178-179.

Vol. IV., p. 45.

Here about the beach I wander'd, nourishing a youth
sublime

With the fairy tales of science, and the long result of time ;

Locksley Hall, p. 98.

Vol. II., p. 42.

SCIENCE IN SPORT

The inventions mentioned below are the outcome
of scientific research :—

 and here were telescopes
For azure views ; and there a group of girls
In circle waited, whom the electric shock

210 IMPORTANCE OF KNOWLEDGE

Dislink'd with shrieks and laughter : round the lake
A little clock-work steamer paddling plied
And shook the lilies : perch'd about the knolls
A dozen angry models jetted steam :
A petty railway ran : a fire-balloon
Rose gem-like up before the dusky groves
And dropt a fairy parachute and past :
And there thro' twenty posts of telegraph
They flash'd a saucy message to and fro
Between the mimic stations ; so that sport
Went hand in hand with Science ;

The Princess (A Medley).

Prologue, p. 166.

Vol. IV., p. 11.

Among the great advances due to science the
conquest of the air is referred to :

Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight, dropping down with costly
bales ;

Heard the heavens fill with shouting, and there rain'd a
ghastly dew

From the nations' airy navies grappling in the central blue ;

Locksley Hall, p. 101.

NEW KNOWLEDGE

the fair new forms
That float about the threshold of an age,
Like truths of Science waiting to be caught—

The Golden Year, p. 94.

Vol. II., p. 30.

To sleep thro' terms of mighty wars,
And wake on science grown to more,
On secrets of the brain, the stars,
As wild as aught of fairy lore ;

The Day Dream, p. 107.
Vol. II., p. 78.

And this gray spirit yearning in desire
To follow knowledge like a sinking star,
Beyond the utmost bound of human thought.

Ulysses, p. 96.
Vol. II., p. 34.

Science moves, but slowly, slowly, creeping on from point to point :

Locksley Hall, p. 101.
Vol. II., p. 54.

Our knowledge is only very superficial compared with the knowledge still to be acquired :—

For Knowledge is the swallow on the lake
That sees and stirs the surface-shadow there
But never yet hath dipt into the abysm,
The Abysm of all Abysms, beneath, within
The blue of sky and sea, the green of earth,
And in the million-millionth of a grain
Which cleft and cleft again for evermore,
And ever vanishing, never vanishes,

The Ancient Sage, p. 548.

KNOWLEDGE AND WISDOM

Knowledge comes, but wisdom lingers, and I linger on the shore,
And the individual withers, and the world is more and more.

Locksley Hall, p. 101.
Vol. II., p. 55.

212 IMPORTANCE OF KNOWLEDGE

The drooping flower of knowledge changed to fruit
Of wisdom.

Love and Duty, p. 93.
Vol. II., p. 25.

And newer knowledge, drawing nigh,
Bring truth that sways the soul of men?

The Day-dream, p. 105.
Vol. II., p. 68.

Make knowledge circle with the winds ;
But let her herald, Reverence, fly
Before her to whatever sky
Bear seed of men and growth of minds.

On a Mourner, p. 65.
Vol. I., p. 246.

INFLUENCE ON THE FUTURE OF THE RACE

The crowning race
Of those that, eye to eye, shall look
On knowledge ; under whose command
Is Earth and Earth's, and in their hand
Is Nature like an open book ;

In Memoriam, p. 286.

All about him shadows still, but, while the races flower and
fade,
Prophet-eyes may catch a glory slowly gaining on the shade,
Till the peoples all are one, and all their voices blend in
choric

Hallelujah to the Maker 'It is finish'd. Man is made.'

The Making of Man, p. 891.

THE FUTURE OF THE RACE 213

Yet I doubt not thro' the ages one increasing purpose runs,
And the thoughts of men are widen'd with the process of the
suns.

Locksley Hall, p. 101.

Vol. II., p. 55.

So I wake to the higher aims
Of a land that has lost for a little her lust of gold,
And love of a peace that was full of wrongs and shames.

Maud, p. 307.

Vol. IV., p. 249.

SECTION XVII

MISCELLANEOUS

IT has not been possible to classify all the references; the outstanding ones have therefore been collected together to form a miscellaneous section.

We may begin with a reference to the earliest stage of development in any form of life :—

That she lives
Is life and lungs to every rebel birth
That passes out of *embryo*.

Queen Mary, p. 623.

Later stages in the development of the human body :—

Before the little ducts began
To feed thy bones with lime, and ran
Their course, till thou wert also man :

The Two Voices, p. 35.

E.E., Vol. I., p. 354.

But he forgets the days before
God shut the doorways of his head.

In Memoriam, p. 259.

This last quotation alludes to the time before
the infant's skull is closed.

Once, like the moon, I made
The ever-shifting currents of the blood
According to my humour ebb and flow.

The Dream of Fair Women, p. 59.

The circulation of the blood varies with varying
moods and emotions.

The following imaginary picture shows the effect
that the taking of certain ingredients may have on
the human brain :—

for the wicked broth
Confused the chemic labour of the blood,
And tickling the brute brain within the man's
Made havock among those tender cells, and check'd
His power to shape :

Lucretius, p. 161.

Vol. II., p. 223.

Early days and peoples :—

The land of Cameliard was waste,
Thick with wet woods, and many a beast therein,
And none or few to scare or chase the beast ;

So that wild dog, and wolf, and boar, and bear
Came night and day, and rooted in the fields,
And wallow'd in the gardens of the King.
And ever and anon the wolf would steal
The children and devour, but now and then,
Her own brood lost or dead, lent her fierce teat
To human sucklings ; and the children, housed
In her foul den, there at their meat would growl,
And mock their foster-mother on four feet,
Till, straighten'd, they grew up to wolf-like men,
Worse than the wolves.

The Coming of Arthur, p. 309.
Vol. III., p. 14.

And found a people there among their crags,
Our race and blood, a remnant that were left
Paynim amid their circles, and the stones
They pitch up straight to heaven :

The Holy Grail, p. 429.
Vol. III., p. 282.

Echoes.

high above, I heard them blast
The steep slate-quarry, and the great echo flap
And buffet round the hills from bluff to bluff.

The Golden Year, p. 95.
Vol. II., p. 32.

Then each, dishorsed and drawing, lash at each
So often and with such blows, that all the crowd
Wonder'd, and now and then from distant walls
There came a clapping as of phantom hands.

The Marriage of Geraint, p. 349.
Vol. III., p. 115.

Precious stones are mentioned, and in one quotation the facets alluded to:—

for his talk,
When wine and free companions kindled him,
Was wont to glance and sparkle like a gem
Of fifty facets ;

Geraint and Enid, p. 358.
Vol. III., p. 137.

and the hair
All over glanced with dewdrop or with gem
Like sparkles in the stone Avanturine.

Gareth and Lynette, p. 332.
E.E., Vol. V., p. 465.

In the Eversley Edition there is the following note :—

Avanturine, sometimes called the Pantherstone—a kind of gray-green or brown quartz with sparkles in it.

The first reading was :—

Like stars within the stone Avanturine.

This simile was taken from a fine piece of the stone Avanturine, set in an etui-case belonging to my mother. “Look at it,” my father said, “see the stars in it, worlds within worlds”—ED.

The pale blood of the wizard at her Touch
Took gayer colours, like an opal warm'd.
Merlin and Vivien, p. 395.

A picture of treeless chalk country :—

Meanwhile the new companions past away
Far o'er the long backs of the bushless downs,
Lancelot and Elaine, p. 402.
Vol. III., p. 217.

Dreams.

Perchance
We do but recollect the dreams that come
Just ere the waking :
Lucretius, p. 161.
Vol. II., p. 223.

There is a theory prevalent that dreams occur
only just before waking.

And here is a reference to sun-dials and
clocks :—

And every span of shade that steals,
And every kiss of toothed wheels,
In Memoriam, p. 281.
E.E., Vol. III., p. 261.

Reflected colour.

Had scoop'd himself
In the white rock a chapel and a hall
On massive columns, like a shorecliff cave,
And cells and chambers : all were fair and dry ;
The green light from the meadows underneath
Struck up and lived along the milky roofs ;
Lancelot and Elaine, p. 402.

Owing to distance it may sometimes be difficult
to discern the real nature of objects seen :—

At times the small black fly upon the pane
May seem the black ox of the distant plain.

On One who Ran Down the English, p. 874.

If water is kept perfectly motionless its temperature may be lowered below freezing point without the water solidifying into ice, but if there is any disturbance it will solidify and expand and break the vessel containing it.

Break, thou deep vase of chilling tears,
That grief hath shaken into frost !

In Memoriam, p. 248.

The greater the speed that a ship is driven through the water the more ruffled will be the reflection of the mast.

A favourable speed
Ruffle thy mirror'd mast.

In Memoriam, p. 249.

We have dealt with the spring conditions in the vegetable world, here is a picture of them in the animal world :—

. . . . shadow forth
The all-generating powers and genial heat
Of Nature, when she strikes thro' the thick blood
Of cattle, and light is large, and lambs are glad
Nosing the mother's udder, and the bird
Makes his heart voice amid the blaze of flowers :
Which things appear the work of mighty Gods.

Lucretius, p. 162.

Vol. II., p. 226.

Sympathetic vibrations.

Consonant chords that shiver to one note ;

The Princess, p. 181.

Vol. IV., p. 54.

A reference to the atomic theory.

The Gods, the Gods !

If all be atoms, how then should the Gods

Being atomic not be dissoluble,

Not follow the great law ?

Lucretius, p. 162.

Vol. II., p. 226.

Spirit *versus* matter.

I trust I have not wasted breath :

I think we are not wholly brain,

Magnetic mockeries ; not in vain,

Like Paul with beasts, I fought with Death ;

Not only cunning casts in clay :

Let Science prove we are, and then

What matters Science unto men,

At least to me ? I would not stay.

Let him, the wiser man who springs

Hereafter, up from childhood shape

His action like the greater ape,

But I was *born* to other things.

In Memoriam, p. 281.

Vol. V., p. 180.